CONCEPT OF ECONOMIC DEVELOPMENT AND ITS MEASUREMENT

A discussion of regional disparities in economic development must be preceded by the concept of economic development and its measurement. The present chapter is therefore devoted to this theme.

3.1 Concept of Economic Development

The earliest concept of development was interpreted in terms of growth of output over time and later in terms of per capita output. The terms growth and development were used interchangeably.

During 1950 and 1960s many developing countries realized their economic growth targets but standard of living of the people did not change. In fact existence of mass poverty, illiteracy and ill health continued to plague the developing countries. This implied that there was something wrong with this definition of economic development. Most of the economists clamored for dethronement of GNP and define development in terms of removal of poverty, illiteracy, disease and changes in the composition of input and output, increase in per capita output of material goods. Increase in output of goods and services and in income does not imply an improvement in the standard of living of the people because GDP is a narrow indicator of economic development that does not include non-economic indicators such as leisure time, access to health, education, environment, freedom or social justice.

Economic development is thus a multivariate concept; hence there is no single satisfactory definition of it. Economic development is a process where
low income national economies are transformed into modern industrial economies. It involves qualitative and quantitative improvements in a country’s economy. Political and social transformations are also included in the concept of economic development in addition to economic changes.

Literally, economic development can be defined as “passage from lower to higher stage which implies change”. Charles P. Kindleberger and Bruce Herrick (1958) point out: “Economic development is generally defined to include improvements in material welfare especially for persons with the lowest incomes, the eradication of mass poverty with its correlates of illiteracy, disease and early death, changes in the composition of inputs and output that generally include shifts in the underlying structure of production away from agricultural towards industrial activities, the organization of the economy in such a way that productive employment is general among working age population rather than the situation of a privileged minority, and the correspondingly greater participation of broad based groups in making decision about the direction, economic and otherwise, in which they should move their welfare”.

Kindleberger while making a distinction between economic growth and economic development argues that: “Economic development implies both more output and changes in the technical and institutional arrangement by which it is produced and distributed”. Economic development in the classical era meant: “an increase in the absolute size of annual production regardless of the size of the population, or an increase in the economy’s real income over a long period of time”.

Consequently in the words of Meier (1964), “economic development is a process whereby an economy’s real national income increases over a long period of time”. This definition fails to take into account the changes in the growth of population. If a rise in real income is accompanied by faster growth in population there will be no economic development but retardation. Thus, some economists define economic development in terms of an increase in per capita income. Drewnewski (1966) defines development in terms of economic and social welfare, “In the standard of living of people economic development is supportive and it involves increased per capita income and creation of new opportunities in education, healthcare, employment sectors. Development is of limited significance if it does not lead to economic welfare. Economic development implies increased per capita income and reduced income inequalities and satisfaction of the people as a whole”.

In 1970’s redistribution from growth became a common slogan. Dudley Seers (1972) raised the basic question about the meaning of development succinctly when he asserted questions about a country’s development, such as “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 this constitutes period of development for the country concerned. 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”.

Further, for understanding the meaning of development Goulet (1971) considers three core values as an important basis and guideline:
1. **Life Sustenance: The ability to meet basic needs:** There are some basic needs (food, shelter, etc.) that are essential for improvement in the quality of life. So the basic function of economic activity is to overcome people from misery arising from shortage of food, shelter.

2. **Self-esteem:** A second universal component of the good life is self-esteem. Self-esteem refers to self-respect and independence and for development of a country it is an essential condition. Developing countries need development for self-esteem to eliminate the feeling of dominance.

3. **Freedom:** A third universal value is the concept of freedom. Freedom here is understood as a fundamental sense of release from freedom, freedom from misery, institutions and dogmatic beliefs. It refers to freedom from three evils of want, ignorance and squalor.

    McGranahan (1972) introduces social factors as an important phenomenon in the process of economic development. According to McGranahan, “development theory is much preoccupied with the rate of social factors as inputs or prerequisites for economic growth. It is widely believed that neglect of these factors has been a reason for disappointing rate of economic growth. At the same time it is evident that there is no simple universal law that can be stated regarding the economic impact of education, health, housing and other social components”.

    Economic development includes economic growth measured in terms of GDP and its distributional dimensions. In respect of this some economists include role of reducing poverty, provision of improving basic needs, goods and services and reduced inequalities in income distribution in the definition of
economic development which can be achieved by increasing the rate of production and employment. Thus, the growth of productive employment is another dimension which is included in the definition of economic development.

Singer and Ansari (1977) define development in terms of decrease of poverty “By economic development is meant not simply an increase in the GNP of a country but rather a decrease in poverty at an individual level. Probably the best indicators of poverty are low food consumption and higher unemployment. If these problems are effectively dealt along with growth of GNP and with a reasonably equitable income distribution then and only then can genuine economic development be talked of”.

In 1980 The World Bank outlined the challenges of development as economic growth, and joined the views of observers taking a broader perspective when in its 1991 World Development Report, it asserted: “The challenge of development is … to improve quality of life. Especially in the world’s poor countries, a better quality of life generally calls for higher incomes but it involves much more. It encompasses as ends in themselves better education, higher standard of health and nutrition, less poverty, a clearer environment, more equality of opportunity, greater individual freedom, and a richer cultural life”.

In 1990’s economists defined development in terms of human welfare, better education, low unemployment, low malnutrition, disease, low poverty, more equality etc. and little importance has been given to GDP and its content. According to Michael Todaro definition of economic development includes both economic and social choices and suggests that improving standard of living must
guarantee economic and social choices and argues that development should “expand the range of economic and social choice to individuals and nations by freeing them from servitude and dependence, not in relation to other people and nation states, but also to the forces of ignorance and human misery”.

Friedman defines economic development “as an innovative process leading to the structural transformation of the social system” while Schumpeter defines development in terms of a discontinuous and spontaneous change in the stationary state which forever alters and displaces the equilibrium state previously existing”.

In 1990’s development economists focused more directly on the development process. Mahbub-ul Haq, a leading Pakistani economist has remarked, “The problem of development must be defined as a selective attack on the worst forms of poverty. Development must be defined in terms of progressive and eventual elimination of malnutrition, disease, illiteracy, squalor, unemployment and inequalities. We are taught to take care of our GDP because it would take care of poverty. Let us reverse this and take care of poverty because it will take care of the GNP. In other words, let us worry about the content of GNP more than its rates of increase”.

In the United Nations Human Development Report (1994) the same idea was highlighted. The report asserts: “Human beings are born with certain potential capabilities. The purpose of development is to create an environment in which all people can expand their capabilities, and opportunities can be enlarged for both present and future generations. The real foundation of human development is universalism in acknowledging the life claims of everyone… Wealth is important for human life. But to concentrate on it exclusively is wrong
for two reasons: First, accumulating wealth is not necessary for the fulfillment of some important human choices. Second, human choices extend far beyond economic well-being”.

Economic development is thus a broad concept which includes both economic and non-economic aspects. Referring to the issue of development Amartya Sen (1999) pointed out that “Development requires the removal of major sources of unfreedom, poverty as well tyranny, poor economic opportunities as well as systematic social deprivation, neglect of public facilities as well as intolerance or over activity of repressive states”.

Thus, we conclude that aggregate and per capita real incomes are not sufficient indicators of economic development. Rather economic development is concerned with economic, social and institutional mechanisms that are necessary for bringing large scale improvements in the levels of living of the masses.

3.2 Measuring Economic Development

Economic development being a multivariate concept having many dimensions, there is no single measure of development that completely captures the process. Clearly these indicators or measures of development should be valid and amenable to measurement and comparison. Per capita income has been one of the earliest and also a popular measure of economic development. Some economists have emphasized on certain social indicators as a measure of development such as levels of literacy, health and employment, while others have emphasized on reduction in poverty as an important indicator of development. It has now become a common practice to measure development in terms of composite indices such as HDI (Human Development Index), GDI (Gender Development Index), HPI (Human Poverty Index) etc. but per capita
income has been a widely used indicator for measuring economic development. It is a primary indicator which measures economic performance of a country. Further, for measuring the rate of economic development national and international agencies mostly use per capita income indicator and it has tremendous conceptual and statistical merits. Per capita income is the best single index which is readily available and an easily assumed measure for classifying countries into developed and less developed and may be used as a relevant starting point.

### 3.2.1 Merits of Per Capita GDP as a Measure of Development

For measuring national economic development, for making an assessment of economic performance of a country and for measuring standard of living of the people per capita GDP, commonly referred to as per capita income is used as an important indicator in monitoring economic growth trends. Economic planners and forecasters have used the GDP per capita as it signifies economic welfare. It helps in developing policies and plans for development because GDP per capita shows whether an economy is improving or not in a more comprehensive manner. It is a convenient benchmark for policy makers and in public debates. It is easily understandable and has been used for measuring human development and well-being of a nation and is regarded as a substitute for all economic activity. In the words of Meier and Baldwin, “an increase in national income may be suggested as the most relevant, as well as most convenient, single measure of development for both poor and rich countries”. Estimates of GDP per capita have been produced by most UN member countries which make comparison between the countries easy and meaningful. The most important advantage of per capita income is that it
concentrates on the raison dethronement of GNP which is the removal of poverty and raising the standard of living of the people. Per capita income may accompany increasing output and it is not a bad substitute for measuring economic and social structure of the societies. Based on per capita income states are classified into forward and backward. Many states, which are classified as backward based on per capita income, possess common characteristics such as high birth rate, high death rate, small amount of saving, low level of technology, low agricultural productivity etc. These states also possess common problems such as high unemployment, poor health and low level of education. Thus, we may conclude that per capita income can be used as an important starting point for measuring economic development.

Additionally it is an important indicator for measuring economic production of a country (saving, credit, accumulation of capital). GDP, from which GDP per capita is derived, measures the value of goods and services which in turn provides estimates of the level of economic growth of a country. Most of the studies try to show that with the help of per capita income economic performance of the states can be easily assessed, therefore in different plans importance has been given to increase in per capita income. GDP per capita continues to be an important indicator of the level of economic development and its measurement is frequent, wide and consistent and on quarterly basis most countries provide information about GDP. For most of the economic activities GDP is the most frequently used indicator and important for the entire system of national accounting. For an economy it provides a better snapshot and change in the economy through its growth rate for various sectors. GDP can highlight the comparative strengths for business activities and act as an accurate barometer for
all business activities. For economic and social well-being it acts as an important macroeconomic indicator and in economic and policy circles GDP is used as a normative indicator of general, social and economic well-being. GDP (GDP per capita) could serve as an important measure for tracking changes in welfare and is easily quantifiable for economic and social welfare and also serves as an important indicator of standard of living of the people. It also provides a rough measure of the relative productivity and the relative material welfare in different countries.

Thus, it may be concluded that for assessing the level of economic development in a country GDP per capita or per capita income is the best single indicator that has been frequently and commonly used.

3.2.2 Limitations of Per capita GDP as a Measure of Development

In spite of the merits there are some limitations of the measure which may be illustrated as follows: GDP per capita derived from GDP that why the problems which are associated with the measurement of GDP are also associated with the measurement of GDP per capita.

Countries having high per capita income do not always have a well educated population or a satisfactory level of educational development. For example low income countries are having a high level of education. Morgan reports that correlation between per capita income and education is not always positive. Morgan also confirms that increase in GDP per capita does not always mean greater welfare or greater production.

Also GDP per capita does not take into account free goods and non-market goods/services. It only counts monetary transactions. GDP accounting
also ignores household activities and assigns a zero value to all activities such as for domestic work, housekeeping (work which are provided by our women at home), care for the elderly and children, cleaning, food preparation and voluntary services, clean air, and family stability, etc. It does not take into account unpaid services, community family activities, non-monetary activities and non-traded goods such as housing, health care, public transport, drug trade where price is not attached and women’s contribution towards economic activities is neglected. Thus, a large number of economic activities remain unrecorded in national income accounting giving an incomplete picture of reality. Also it does not evaluate whether an activity is useful or harmful for a society.

Further, transactions such as crime, divorce, pollution, natural disasters, depletion of natural resources, accidents, diseases are treated as positive transactions because these events lead to increased spending. GDP ignores welfare loss that results from these outside events. Thus, it deals with the breakdown of the social structure and the natural environment as positive activities and treats all these activities positive and gainful as no distinction is made between contributing well-being activities and damaging well-being activities. For national production activity GDP is a good measure but it does not evaluate whether this activity is useful or harmful for a society.

GDP only measures the flows of natural resources and stock of natural resources are ignored in national income accounting. When natural resources are discovered they add to the wealth of the economy and are regarded as flows. However, when they are drawn down they reduce the wealth of the economy and hence, GDP ignores stock of natural resources. Furthermore, GDP takes into account goods which increase utility but it ignores or excludes externalities or
economic bads such as environmental damage caused by higher production or by accounting for the negative effects of higher production.

Cost of polluting industries, high level of pollution and exploitation of the workforce are also not included in the estimation of national income. Distinction between environmental friendly and environmental hazardous industries is also not made in national income estimates. Thus, by doing this it does not truly estimate living standards of the people or it over-estimates living standards because living standards of the people decrease as pollution increases. Some countries grow rapidly by exploiting their renewable resources and non-renewable resources. This increases the current standard of living leaving nothing for future generations. For example the fishing industry in Europe is currently facing major problems as a result of over-fishing in the past. Thus, GDP is not a true indicator of future welfare. The work that produces no net change or repairing works is included in GDP, for example- rebuilding works after natural disaster or by which considerable amount of economic activity is produced thus boost GDP.

GDP does not take into account local differences in the quality of goods that is why cross border comparisons of GDP can be inadequate. Thus, GDP tends to under estimate real domestic or national output expressed in terms of national currency.

Drawbacks of GDP were also expressed by Austrian economist Frank Shostak. He stated that:

“The GDP framework cannot tell us whether final goods and services that were produced during a particular period of time are a reflection of real wealth expansion or reflection of capital consumption”. He goes on:
For instance, if a government embarks on the building of a pyramid, which adds absolutely nothing to the well-being of individuals, the GDP framework will regard this as economic growth. In reality, however, the building of the pyramid will divert real funding from wealth generating activities, thereby shifting the production of wealth. For each of the dimensions of economic development there is a problem of devising a quantifiable measure and by not including quality of goods GDP does not truly estimate economic development and results in greater inefficiency and waste and also by not accounting quality improvement and new products which increase the standard of living of the people. Economic development is not truly estimated by GDP.

Sustainability of growth is also not measured by GDP. There is not a straight forward relationship between economic growth and other dimensions of sustainable development, for example: a country can achieve high GDP by over exploiting natural resources or misallocating investment. GDP has nothing to do with the sustainability of growth. Nobel Prize winning economist, Simon Kuznets was one of the main originators of GDP but also aware of its limitations and he in his very first report to the U.S congress in 1934 said:

“The welfare of a nation can scarcely be inferred from a measure of national income. If the GDP is up why America is down? Distinctions must be kept in mind between quantity and quality of growth, between costs and return and between the short and long run. Goals for more growth should specify more growth of what and for what”.

Further, by over exploiting natural resources or by misallocating investment a country may attain high GDP for example people in Nauru may achieve high per capita income because of large deposits of phosphates but after
1989 their per capita income has reduced or standard of living has declined as the supply of phosphate has run out. Similarly without any industrialization oil rich countries have high levels of GDP but their high level would no longer be maintained or sustainable if the oil runs out. At the expense of environmental degradation economic growth would no longer be sustained. GDP ignores this sustainability of growth. This is the reason why the use of GDP as a substitute of social welfare is criticized by various economists such as Simon Kuznets, Daniel Kahneman, Robert Solow, Stiglitz, Amartya Sen and Mohd. Yunus.

GDP is under-estimated as it does not include the underground economy, income derived from black economy (in which illegal trade and tax avoiding activities are not recorded in GDP) or informal/black market (crime), transactions of black economy and parallel economy in official GDP statistics and hence under-estimates economic development or understates real value of output because black market is an important part of the subsistence economy. Black economy is all pervasive, it affects not only the economy but the society as well and this black economy has continuously increased since 1995-96. Thus, per capita income derived from GDP is not a true indicator of economic development.

Furthermore, national income accounting also ignores volunteer services by social workers and organizations in GDP and works by charity institutions are not counted in GDP, which are precious for a large number of deprived people—orphans, women, elderly and the handicapped people. Structural and distributional patterns of income may also not be reflected by the average income. For example net output per capita may be growing by twenty percent but only five percent to ten percent of population may experience higher levels
of living. Thus, average income is not a true measure of economic development. The data available for GDP estimates is not very accurate. Inadequate and unreliable statistical information may be misleading. Such drawbacks of available economic data on GDP with regard to developed countries have been referred to by seers. “I have examined the worksheets in about 20 countries. The blunt truth of the matter is that when one takes into account the difficulties of allowing for inventory changes and depreciations and of deflating current price data, the published national income series for a large number of countries have very little relevance to economic reality”. In developing countries there are, in addition, problems related to valuation of economic transactions.

Subjective elements are also not measured by per capita income. For example it does not tell us about the availability of happiness, justice, security, freedom, or leisure to the society and for measuring well-being of people. GDP, from which per capita income is derived, is not a perfect indicator as it treats depletion of natural assets as income earned currently. GDP treats all the money that is involved in converting forest into lumber or farmland into parking lots as current income and not as capital depreciation. Treating depletion of assets as current income would give incorrect estimates of GDP involving a false sense of well-being. Stavros Dimas European Commissioner of the environment in one of his speeches highlighted the inadequacy of GDP as a measure of well-being by stating: “GDP measures the final market value of goods and services while it is widely believed that people’s well-being and quality of life improve as they get wealthier, economic wealth is not everything. Quality of life depends to a degree on the types of goods consumed, good access to healthcare, quality of education, family relations, the integrity of our public officials and the state of
our environment. So we would be able to measure these important objectives. GDP is not an indicator that measures wellbeing or welfare”.

GDP also excludes income inequality between the rural-urban areas. As for long term economic development income inequality is suggested as an important factor without reduction of which economic development would not be possible. If GDP is owned by small percentage of wealthy people then there is low economic development in the majority of the economy. For example wealth in Saudi Arabia is not equally distributed and only shared by a small majority of population.

Finally we can say that difficulties arise with the use of per capita income for making inter country comparisons of economic development on the basis of official exchange rates as they do not reflect local purchasing power and make it difficult to compare living standards of people of different countries by means of GDP.

3.3 Other Measures of Development

An essential aspect of development is to enable the maximum number to experience the fruits of development. Concepts of per capita income (per capita GDP or per capita NSDP) are not able to capture this aspect of development. This translates into maximization of human welfare which is reflected in social indicators of development such as life expectancy, literacy, access to basic amenities like safe drinking water etc. Some of these are discussed below:

3.3.1 Description of Social Indicators of Development

Per capita income does not have special features which the non-monetary or social indicators have. The most important feature is that these social
indicators are free from distributional effects. Second most important characteristic of social indicators is that they are direct measures. Among the social indicators length of life, state of prevalent health, housing status, nutritional condition, educational achievement are direct measures that can provide information about the standard of living of the people. Thus, social indicators better reflect the welfare of the people. They are less prone to difficulties of measurement, complex schemes of valuation, conceptualization and measurement.

Social indicators cannot be easily aggregated and give an interesting but incomplete index of the level of the people. Other important characteristic of social indicators is that they also have upper limits, which means that they cannot be skewed with the presence of individuals whose features are very different from the average individuals. On the other hand, per capita income is skewed by the presence of few individuals whose characteristics are largely different from the average because in per capita income few high-income individuals can increase the average for everyone else.

These kind of social indicators measure basic values and are unaffected by disparities in income among the society. Remarkable increase in these social indicators ensures a rising standard of living rather than being improved only among the tiny elite. In addition social indicators seem to reflect attractively the various standards of everyday life by their potential multidimensionality. We can therefore safely say that per capita NSDP appears to be an insufficient and inadequate measure of economic development which is multidimensional and measuring economic development without taking into account non-monetary indicators appears to be insufficient. Further, we can say that it ignores factors
such as distribution of income, differences in development potential and other physical indicators of the quality of life. Because of the arbitrariness of per capita income, it is suggested that other indicators of development should be included in any measure of development.

Some of the more important social indicators of development are various educational and health indices, access to safe drinking water etc. These are discussed at some length below.

a) Education: Education, especially female education proves as a good social indicator of economic development of a nation. Education helps one person to acquire knowledge, skills, values and attitudes, which help to achieve a better quality of life. At the base level education is important as it removes the strangle-hold of traditions, which hold back development. At the secondary level, it lays down the basis for higher education while improving capabilities and productivity also. In addition it itself provides cadre for middle level jobs. At the tertiary or higher education level, it improves capabilities of the work force and enhances leadership qualities and it helps to achieve a better quality of life. Education is an important determinant of all stages of change and it opens the doors of modernization. It is thus a trustworthy and suitable indicator of development. Some of the educational indicators are:

i) Literacy: Literacy rate is an important indicator reflecting educational attainment of a people. It is the symbol of the quality of the people. The literacy level rises with economic development. In developed countries, there is hundred percent literacy while in developing countries it is lesser, eg. In India it was 64.84 percent according to the 2001 census. A higher level of literacy results in
greater economic output, better health, and higher employment level. Literate people are more receptive and willing to accept changes that along with modernization. Since it is expected that children will be enrolled in schools, it is adult literacy that is being referred to here. In developing countries the literacy levels of women are generally lower than that of men. There is a threshold level of literacy below which development is not possible. In a study by Anderson and Bowman, quoted by Natarajan (1990) it was found that where literacy levels were less than forty percent countries remained poor. Rich countries had literacy of more than seventy percent.

Adelman and Morris also emphasized on the successful establishment of an industrial base which requires the creation of a literate trained labor force committed to urban industrial pattern of living.

ii) **Gross Enrolment Ratios**: Another educational indicator is the gross enrolment ratios at different levels education - primary, secondary and tertiary. Gross Enrolment Ratio refers to the number of student enrolled at different levels of education or the total enrolment in primary, secondary and tertiary level of education. The gross enrolment ratio is a statistical measure and it provides a rough symbol of the level of education. The higher Gross Enrolment Ratio (GER) means higher quality of life. Human Development Index also takes the gross enrolment ratios for purpose of calculation.

b) **Health**: Good health is an important requirement of a satisfying life and is a measure of the quality of human capital. For achieving higher rate of economic and social development health is the most important driver.
Health is an index of the inherent capacity of an individual to be able to do things and it affects welfare. It widens the capabilities of the poor and increases their consumption standards by ignoring diversions of their incomes towards costly health care. But in health there are a variety of factors like food, water, housing, income sanitation, education and presence of health care facilities that shape the health status of the population. A statistical estimate suggests that each ten percent improvement in life expectancy at birth results in increase of economic growth of at least 0.3 to 0.4 percent per year. Thus, growth rate difference between high income (LEB=77Yrs) and a low-income country (LEB=49yrs) is about 1.6 percent per year. Furthermore, according to World Development Report 2000;

“Better health, education, equal and wider job opportunities to all, trustworthy and transparent people’s institutions, sustainable and cleaner environment, and dignity, self-esteem and life security among others, are key manifestations of the quality of growth”.

For supporting economic and social well-being, improvement in the health status of the people is essential. There are two-way linkages between health and development. From the mid-20th century, public health attempts have improved globally in removing several diseases. In human society revolution, health care systems act as an important catalyst. Health is a multidimensional subject as WHO (World Health Organization) shows physical, mental and social parameters of health. Health is multifactor as well. There are number of factors such as hereditary factors, environmental factors, life style, adequate housing, basic sanitation, income, education quality and presence of health infrastructure and per capita health infrastructure that are affected by health. Health covers a
wide range of activities like population control, family planning, and drug control, prevention of food adulteration, immunization and removal of major communicable and non communicable diseases

Income, which is an important determinant of economic development, also determines health status of a people which in turn contributes to increase in the incomes by raising productivity of workers. Health occupies an important place in any policy of poverty reduction, economic growth and long term economic development. Poverty affects all the classes of people, the poorer being affected more by poverty than the rest, and they are susceptible to diseases because of lack of clean water and medical facilities. WHO Commission on Macroeconomics and Health, set up in 2000 observed that without improvement in health facilities development would not take place in developing countries. Prof. Sachs of Columbia University has observed that India, which is spending less than one percent of its GNP on its healthcare budget, will not be able to achieve a growth of eight per cent without a significant increase in its budget for health and nutrition. The following health indicators have been selected for analysis in this study:

(i) **Life Expectancy at Birth (LEB)**: In technical literature Life expectancy symbol means the average number of complete years of life remaining, i.e. excluding fractions of a year. Among all the measures of health life expectancy at birth is the most frequently selected indicator for examining health status of a people and for many dimensions such as sufficient nutrition, health and education it is an important measure. Besides this LEB is an essential component in the construction of HDI (human development index) which has become a commonly used indicator of economic performance of a country and its
comparison with the rest of the world. Life expectancy is directly related to the increase in income, as is revealed by the figure in developed countries like Japan, Australia, and Canada etc.. Some estimates show that average Life expectancy in high income countries is more than eighty percent while in low income countries it is less than sixty percent.

(ii) Maternal Mortality Ratios (MMR): A maternal mortality ratio is defined as the number of maternal deaths per 100,000 live births in one year. The international classification of disease defined maternal death as “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management accidental or incidental causes” (WHO, 1997).

In developing countries like India reproductive age group women form more than 1/5th of the total population and in the prevalent socio-economic conditions and insufficient medical facilities, they are pressurized to give birth and are exposed to child bearing at an early age. Frequent child bearing also takes a toll of women’s health. Statistics show that in the developing countries maternal mortality rates are very high as compared to developed countries. Estimates of maternal mortality vary in developing countries like India. Poor access to safe reproductive healthcare, non-institutional deliveries, absence of emergency obstetric assistance, neglected women health and nutrition leading to anemic conditions are the special factors that result in a high maternal mortality ratios. Lack of freedom is also the important reason that results in high maternal mortality rate. Because of lack of freedom they are confined to the house and do not acquire knowledge about contraceptive pills, age of fertility, various cares
that should be taken during pregnancy etc. that in turn result in high maternal mortality.

(iii) Infant Mortality Ratios (IMR): Infant mortality is defined as the number of deaths of infants per 1000 live births. A few decades back infant mortality claimed a considerable percentage of children born. Infant mortality indicator is an inclusive development indicator that shows the quality of health of infants. IMR is more than just a mortality indicator. It reflects the status of people for example education and income of parents, existence of disease, malnutrition, and availability of clean drinking water and health status of the women in a society. That is the reason why a reduction in IMR indicates improved living standards. Factors responsible for high infant mortality worldwide are diarrhea leading to dehydration (commonest cause of IMR), pneumonia infanticide, child abuse, various infections, congenital malformation etc.

c) Access to Safe Drinking Water and Sanitation

It is the restricted access to safe drinking water that affects the health status of the people directly and significantly and also the overall quality of life. According to recent estimates, over ninety percent of India’s population has access to safe drinking water. Such a high coverage rate for drinking water reflects perhaps the superficial realities of India and not the ground realities. Large segments of population in both rural and urban areas remain without access to sufficient safe drinking water. As a matter of fact many water borne diseases continue to be life-threatening diseases for example diarrhea, which takes the lives of millions of children. Many harmful chemicals such as arsenic cause water contamination, which further causes serious harm in many parts of the country.
3.3.2 Composite Index of Development

The trend now is that development is measured in terms of composite indices of development which take account of different aspects of development. Several such indices have been developed, some of which are discussed here.

a) **Physical Quality of Life Index (PQLI):** developed by Morris D. Morris in 1979. He calculated the PQLI taking account of literacy, life expectancy and infant mortality. Thus, it shows improvement in the quality of life with increase in life expectancy (LE), fall in infant mortality rate (IMR), and rise in basic literacy rate (BLR). This index was considered inadequate as it did not cover important aspects of development and it did not measure total welfare either.

b) **Human Development Index (HDI):** invented by Lord Meghnad Desai and Nobel Laureate Amartya Sen and launched by Mahbubul-Haq, a leading Pakistani economist. The HDI is a composite index of three social indicators: life expectancy, adult literacy and years of schooling. It also take into account real GDP per capita. Thus the HDI value of a country is calculated by taking three indicators Longevity, Educational attainment and decent standard of living. HDI ignores other indicators of human development such as infant mortality, nutrition etc and it measures relative rather than absolute human development. Human development index ranges from 0.897 in high human development countries while for low human development countries it is 0.436.

c) **Human Poverty Index:** The United Nations Development has created a measurement system based on what is lacking in different areas of the
world. This measurement is called the Human Poverty Index. Human Poverty Index was first launched in 1990 and it is used by the United Nations to signify the standard of living in a specific country. It measures the amount of deprivation people experience in different countries. Factors such as short life expectancy, low literacy rates and overall living conditions are recorded in the human poverty index. A recent innovation has been the publication of a new poverty index (HPI-2) measures poverty in industrial countries.

3.3.3 Poverty

Poverty is a social phenomenon prevalent in society in which necessities of a large section of the population are not fulfilled. It exists all over the world. There are two concepts of poverty, relative and absolute: The concept of relative poverty can be measured in terms of distribution of income or consumption expenditure, and it is useful for developed countries only where there is no absolute poverty. The concept of absolute poverty is related to minimum level of living and can be measured in terms of income and consumption expenditure. For the measurement of poverty, consumption is considered as more suitable than income. Absolute poverty is prevalent in less developed countries and is of significant dimensions, hence of concern to the country concerned. The absolute poverty can be indicated in terms of intake of essential food like cereals, pulses, milk, vegetables, butter or calculated in terms of calorie intake. It is income or expenditure level that can sustain or maintain a minimum standard of living. Life expectancy, infant mortality rate, literacy, nutrition, access to primary school, health clinic and drinking water are the important factors giving appendix information of poverty.
3.4 Measures of Inequality

In this section we will deal with the measurement of inequality. There are many measures of inequality such as:

a) **Coefficient of Variation**: To find out the imbalance between the different states in terms of per capita incomes, this measure is given by Yotopoulous and Lau. Coefficient of variation is based on mean and dispersion. It is an average index of inequality for all regions. It measures the variation of observation from the mean. If its value is positive it means observations are more than mean value as well as if its value is high it means that distances from the mean value is high. Disparity occurs when its value is positive and increases during the time period.

Coefficient of Variation = \( \frac{\text{S.D}}{\text{MEAN}} \times 100 \)

Where \( \text{S.D} = \) is the standard deviation of that period.

\( \text{MEAN} = \) is the mean of that period.

A high co-efficient of variation signifies high inequality or disparity between different items under study.

b) **Theil Index**: This measure was developed by Theil (1967) and used by Cuadrado, Dehesa and Precedo (1993) to study income inequalities among the member states of the European Economic Community.

Under this measure relative inequality among the regions, in any economic indicator such as income, is best explained by a simple ratio which compares shares of the states in that indicator (say, income) with their respective shares in population. By comparing the ratios it provides a good
description of inequality among regions. For example if we take income indicators and compare the ratios $y_i/p_i$ across regions, where $y_i$ and $p_i$ is respectively the $i$th share in total NSDP and the region’s population. The regions which have $y_i/p_i$ above unity are better-off states and the regions which have $y_i/p_i$ below unity are not doing well.

c) **Kuznets Hypothesis**: At the American Economic Association meeting conference in 1954 Simon Kuznets suggested that income inequalities first increase among regions and then decrease as a country industrializes. Kuznets hypothesis of inverted u-shaped curve of inequality among the states tested with the help of coefficient of variation across the states over the time, if the coefficient of variation increases, this mean that the inter-state disparities in India has continuously risen, showing clearly, that regional inequality in India does not follow Kuznets’ curve. Kuznets’ hypothesis also examined in terms of quadratic equation which is generally used to test this hypothesis.

d) **Gini-Coefficient**: It measures the degree of inequality in the total population which arises due to inequality among states. It is the best way of measuring whether the pattern of growth has led to an increase in inter-state inequality or otherwise. This can be done by taking the entire population of the states and by assuming that all individuals within a state have a gross income equal to the per capita SDP. The Gini-Coefficient provides a measure of inequality for the total population of the states.