POLITICAL ECONOMY OF DEVELOPMENT AND PLANNING

STUDY MATERIAL

B.A. ECONOMICS

VI SEMESTER

CORE COURSE

(2011 ADMISSION)

UNIVERSITY OF CALICUT

SCHOOL OF DISTANCE EDUCATION

THENJIPALAM, CALICUT UNIVERSITY P.O., MALAPPURAM, KERALA - 693 635

274

UNIVERSITY OF CALICUT

SCHOOL OF DISTANCE EDUCATION

STUDY MATERIAL

B.A. ECONOMICS

CORE COURSE

THE POLITICAL ECONOMY OF DEVELOPMENT AND PLANNING

Course Preparation Team

Materials Prepared by:	**Modules**
Greeshma. H. *Assistant Professor,* *Department of Economics,* *CKGM Government College* *Perambra,* *Kozhi kode – 673 580*	**1& 2**
Dr.P.Chacko Jose *Associate Professor,* *Department of Economics,* *Sacred Heart College Chalakkury* *Trichur*	***3***
Dr. C. Krishnan *Associate Professor,* *PG Department of Economics,* *Government College Kodanchery,* *Kozhikode – 673 580.* *e-mail:ckcalicut@rediffmail.com*	***4***
Subash. V.P. *Assistant Professor,* *PG Department of Economics,* *Government College Malappuram*	***5***

Edited and Scrutinised by : ***Dr. C. Krishnan***
Associate Professor,
PG Department of Economics,
Government College Kodanchery,
Kozhikode – 673 580.

Type settings & Lay out
Computer Section, SDE

Curriculum and Syllabus

THE POLITICAL ECONOMY OF DEVELOPMENT AND PLANNING- EC6 B14

a. Introduction:

This course on the political economy of development and planning attempts to answer questions related to economic development in a comprehensive manner. Students who wish to take up position in formulation and implementation of public policy must have a reasonably good understanding of its political economy aspects

b. Objectives:

The main. objective of this course is to introduce the students of such fundamental topics in. development and planning with their inter relations. This course is expected to provide students a comprehensive approach towards issues related todevelopment and planning.

c. Learning Outcome:

The students are expected to develop an interrelated to approach to resource use, the relationship between man and man and man and nature.

d. Syllabus:

Module I: Perspectives on Development Economics

Why study Development economics? Growth and Development, An overview of measurement of development – GDP, PCI, PQLI, HDI, HPI, GDI, GEM, Sen's Capability Approach, Kuznet's inverted 'U'.

Module II: Theories of Development

Low-level equilibrium trap, vicious circle of poverty, critical minimum effort, Big Push theory, Balanced versus Unbalanced theory.

Module III: Economic Planning

Concept, meaning and types of planning, technique of planning, project formulation and
evaluation – Cost-Benefit Analysis. Market versus planning. Relevance of planning in the context of globalization.

Module IV: Economic Planning India

Indian planning in a historical perspective, Bombay plan, Gandhian Plan, People's plan.
Five-year plans in India – an overview. Details of current five-year plan

Module V: Issues in development

Poverty – measurement and classification, Inequality and its measurement (Gini coefficient), gender issues – the concept of missing women. environment versus development – the concept of sustainable development, limits to growth, global warming.

Reference:

1. A.P. Thirlwal 'Growth and Development', palgrave
2. M.P. Todaro SC Smith 'Economic Development' Pearson Education
3. Subrato Ghatak 'Introduction to Development Economics' - Routledge
4. Amir Kumar Bagchi - The Political Economy of Development – Orient Longman
5. Lester R Brown – Eco Economy – Orient Long man
6.Donella Meadows et.al – Limits to Growth – the Thirty Years update- Viva Publications.

MODULE I

PERSPECTIVES ON DEVELOPMENT ECONOMICS

INTRODUCTION

Development economics is a branch of economics that deals with economic aspects of the development process in low-income countries. Its focus is not only on methods of promoting economic development, economic growth and structural change but also on improving the potential for the mass of the population, for example, through health and education and workplace conditions, whether through public or private channels.

Development economics involves the creation of theories and methods that aid in the determination of policies and practices and can be implemented at either the domestic or the international level. This may involve restructuring market incentives or using mathematical methods like inter-temporal optimization for project analysis, or it may involve a mixture of quantitative and qualitative methods.

Unlike in many other fields of economics, approaches in development economics may incorporate social and political factors to devise particular plans. Also unlike many other fields of economics, there is "no consensus" on what students should know. Different approaches may consider the factors that contribute to economic convergence or non-convergence across households, regions, and countries.

History of Development Economics

Economic development' is a term that economists, politicians, and others have used frequently in the 20th century. Although no one is sure when the concept originated, most people agree that development is closely bound up with the evolution of capitalism and the demise of feudalism. Although Adam smith may be considered the first development economist and his Wealth of Nation the first treatise on economic development , the pioneering work of three Nobel price winners Arther Lewis(1979), Theodore Schults (1979) and Amruthya Sen (1998)- provided dramatic confirmation of the status of economic development as a separate field in the economic discipline. The world wide depression (1929- 33) and the second world war were the two historic events that compelled the nation all over the world to think seriously about the problem of economic development. In the second half of the 20th century, economists become acutely aware of the difficulties of a large number of countries in the developing world, most of them former colonies of industrialized nations. Development economics become synonymous with the study of how these countries could progress out of poverty. Albert O. Hirschman, a major contributor to development economics, asserted that economic development grew to concentrate on the poor regions of the world, primarily in Africa, Asia and Latin America yet on the outpouring of fundamental ideas and models.

Because of the heterogeneity of the developing world and complexity of the development process, development economics must be eclectic, attempting to combine relevant concepts and theories from traditional economics along with new models and approaches deriving from studying the development experience of Africa, Asia and Latin American countries. In economics, the study of economic development was borne out of an extension to traditional economics that focused entirely on national product, or the aggregate output of goods and services. Economic development was concerned in the expansion of people's entitlements and their corresponding capabilities, morbidity, nourishment, literacy, education, and other socio-economic indicators. Borne out of the backdrop of Keynesian, advocating government intervention, and neoclassical economics, stressing reduced intervention, with rise of high-growth countries (Singapore, South Korea, Hong Kong) and planned governments (Argentina, Chile, Sudan, Uganda), economic development, more generally development economics, emerged amidst these mid-20th century theoretical interpretations of how economies prosper.

Economic development concepts refer to the quantitative and qualitative changes in the economy. Such actions can involve multiple areas including development of human capital, critical infrastructure, regional competitiveness, environmental sustainability, social inclusion, health, safety, literacy, and other initiatives. Economic development differs from economic growth. Whereas economic development is a policy intervention endeavor with aims of economic and social well-being of people, economic growth is a phenomenon of market productivity and rise in GDP.

Approaches regarding Definition of Economic development.

No single definition of economic development can be considered comprehensive and convincing. Various definition of economic development given by different writers, stress one or the other aspect of development and as such are not complete in themselves. In present day, there are two main approaches regarding definition and concepts of economic development as given below:

(I) Classical or traditional Approach or Per capita Income Approach.
(II) New or Modern Approach or Welfare oriented Approach.

(I) Classical or traditional Approach or Per capita Income Approach

According to Classical or traditional Approach, economic development may be defined in terms of increase in national income or per capita income.

(1) According to Paul Albert "Economic development is the exploitation of all productive resources by a country in order to expand real income".
(2) According to Salvatore, "Economic development has been defined as the process by where by a country's real per capita, Gross national product or income increases over a sustained period of time through continuing increase in per capita productivity."

(3) According to Prof Willamson and Bittrick, "economic development refers to the process, whereby, the people of the country or the region come to utilize the resources available to bring about a sustained increase in per capita production of goods and services."

(4) According to Penguim Dictionary of economics, Economic development is the process of growth in the total and per capita real income of an economy accompanied by fundamental changes in the structure of the economy."

(5) According to Paul Barau, "economic development may be defined as an increase in over time in per capita output of material goods".

Criticism

The above definition of economic development is based on per capita increase in income and thus subject to criticism on the following grounds.

1. Changes in per capita is not the true measuring rod of economic development
2. It is not necessary that the increase in real national income or per capita income may increase the real standard of living of masses. It is possible that as per capita income increases, the gap between the poor and the rich may increase, i.e, the rich may become richer and masses may remain poor despite an increase in the real national income.
3. The traditional definition of economic development is considered to be a narrow definition; it has studied one aspect of economic development i.e, per capita income and thereby ignored other important aspects of factors influencing economic development.

(II) **New or Modern Approach or Welfare oriented Approach**.

According to new or modern approach or welfare approach, the economic development has been defined in terms of economic welfare. During the 1970's economists redefined the concept of economic development in terms of economic welfare or in terms of the satisfaction of the basic needs of the people. As per the new definition, economic development is the process by which poverty, backwardness, inequality, unemployment, etc. is reduced. Some of the welfare definitions of economic development are as follows.

1) According to Colin Clark, "Economic development is simply an increase in economic welfare."
2) According to Okun and Richardson," Economic development may be defined as a sustained secular improvement in material well-being which we may consider to be reflected in an increasing flow of goods and services."
3) According to Kindle Berger and Herrick," Economic development is generally defined to include improvement in material welfare, especially for the person with the lowest income, diseases and really death."
4) According to United Nations expert committee, "development concerns not only man's material needs but also the improvement of the social condition of his life. Development is, therefore, not only economic growth but growth plus change – social cultural and institutional as well as economic."

In recent times, economic development has come to be redefined in terms of the reduction or elimination of poverty, inequality and unemployment within the context of growing economy. Therefore, "development is a multidimensional process involving major changes in the social structure, popular attitudes and national institutions as well as the acceleration of economic growth, reduction in inequality and absolute poverty."

Dudley Seers pointed out that if poverty, unemployment and inequality have declined in a certain period for a country, that period is a period of development for that country. But even if per capita income doubled and any or all of the above mentioned problems have worsened, the result can hardly be called development

Mahbub ul haq, leading Pakistani economists remarked in 1971 that development goals must be defined in terms of "progressive reduction and eventual elimination of malnutrition, disease, illiteracy, unemployment and inequalities." He said that" if poverty is taken care of GNP will be taken care of."

D Goulet in !971 distinguishes three basic core values in the wider meaning of development ,namely ,life substance ,self esteem, and freedom. No country can be considered fully developed if it is not able to provide all its people with basic needs that sustain life, such as food, clothing, shelter and minimal education.

The basic need approach to development was initiated by **world bank** in the 1970's. No country can be regarded as fully developed if it is dominated by others and lacks the power to conduct international relations on equal terms.

Amarthya Sen's concept of development looks back to Goulet's core values. Sen define development in 1983 and in 1984 in terms of expansion of entitlement and capabilities, the former giving life- sustenance and self esteem and the latter giving freedom. Sen states that the core human wellbeing is 'freedom of choice' by enhancing people's capabilities for attaining higher standard of health, knowledge, self respect and ability to participate actively in common life. He views freedom as the primary objective of development and the principal means of achieving development.

Thus one may say that development has occurred when there has been an improvement in basic needs, when economic progress has contributed to a greater sense of self esteem for the country and the individuals with in it, and when material advancement has expanded people's entitlement and capabilities.

Growth and Development

For a common man, the term economic development and economic growth are synonyms. For a long time – till sixties—the term economic development and economic growth were often interchangeably used – it is not so any more. Economic development is more extensive and comprehensive in meaning than economic growth.

Economic growth is referred to the increase of per capita real gross domestic product over a period of time. Real GDP is a quantitative concept since it involves increased productive capacity in an economy, which leads to rising national output, incomes and living standards over time.

Economic growth can occur from two main factors:

1. The increased use of resources such as land, labour, capital and entrepreneurial resources due to improvements in technology.

2. The increased productivity of existing resources use through increased labour and capital productivity.

In contrast, economic development is a qualitative process and refers to structural change of economic and social infrastructure in an economy, which allows an increase in the standard of living in a nation's population. Economic development is a broader concept than economic growth. Development reflects social and economic progress and requires economic growth. Growth is a vital and necessary condition for development, but it is not a sufficient condition as it cannot guarantee development. One of the most compelling definitions of development is that proposed by Amartya Sen. According to Amarthya Sen, development is about creating freedom for people and removing obstacles to greater freedom. Greater freedom enables people to choose their own destiny. Obstacles to freedom, and hence to development, include poverty, lack of economic opportunities, corruption, poor governance, lack of education and lack of health.

Some leading economists have drawn a line of demarcation between economic development and economic growth. According to Kindle Berger," economic growth means more output and economic development implies more output and changes in the technical and institutional arrangements, by which it is produced". According to Prof.Schumpeter," development is a discontinuous and spontaneous change in the stationary state, which forever alters and displaces the equilibrium state previously existing; while growth is a gradual and steady change in the long run, which comes about by a general increase in the rate of saving and population.

According to Dr. Bright Singh "Economic development is a multi-dimensional phenomenon, it involves not only increase in money income, but also improvement in real habits, education, public health, greater leisure and in fact all the social and economic circumstances that makes for a fuller and happier life. On the contrary, in case of economic growth, here is increase in national income alone. There are no structural changes in the economy. Amartya Sen points out: "economic growth is one aspect of the process of economic development."

Economic growth and development can vary from different countries, depending on their level of income, quality of life, environmental quality and the government's involvement within the economy. Thus economic growth is related to a quantitative sustained increase in the countries national income or output. On the other hand, economic development is a wider concept than economic growth " *It is taken to mean growth plus change.*"It describes the underlying determinants of growth such as technological and structural change. An economy can grow but it may not develop because poverty, unemployment and inequalities may to persist due to the absence of technological and structural changes. But it is difficult to imagine development without economic growth. Development is not possible in the absence of increase per capita out put, particularly when population is growing rapidly. Despite these differences, some economists use these terms as synonyms. Arthur Lewis in his The Theory of Economic growth writes that " most often we shall refer only to growth but occasionally for the sake variety, to progress or development." Economic growth is a necessary but not sufficient condition of economic development.

Comparison chart

	Economic Development	**Economic Growth**
Scope:	Concerned with structural changes in the economy	Growth is concerned with increases in the economy's output
Growth:	Development relates to growth of human capital indexes, a decrease in inequality figures, and structural changes that improve the general population's quality of life	Growth relates to a gradual increase in one of the components of Gross Domestic Product: consumption, government spending, investment, net exports
Implication:	It implies changes in income, saving and investment along with progressive changes in socio-economic structure of country (institutional and technological changes)	It refers to an increase in the real output of goods and services in the country like increase the income in savings, in investment etc.
Measurement:	Qualitative.HDI (Human Development Index), gender- related index (GDI), Human poverty index (HPI), infant mortality, literacy rate etc.	Quantitative. Increase in real GDP. Shown by PPF.
Effect:	Brings qualitative and quantitative changes in the economy	Brings quantitative changes in the economy
Concept:	Normative concept	Narrower concept than economic development
Relevance:	Economic development is more relevant to measure progress and quality of life in developing nations.	Economic growth is a more relevant metric for progress in developed countries. But it's widely used in all countries because growth is a necessary condition fordevelopment.

In sum, growth and development complement each other. There can be no sustained economic growth without extensive changes through the economy and it is difficult to see how there could be any substantial development without any increase in the economy's ability to produce welfare- enhancing goods and services.

Measurement of Economic development

Economic development is a long process in which several forces or factors work together to bring about an economic change for the betterment. Hence no single method of measurement of economic development can be adopted. That is why different methods of measurement of economic development have been floated by different economists.

Gross Domestic Product

Gross domestic product (GDP) is the most popular and simple method of measuring economic development of a country. GDP per capita is widely assumed to be a good indicator of a country's level of development. Several leading economists have supported this method, such as Meir and Baldwin,Simon Kuznets, Mrs urshala hicks ,Samuelson and A C Pigou. According to A C Pigou" the economic development can be measured in terms of changes in national income over time". In the words of Prof. Samuelson "GNP is the best measure of economic development'. In the words of mrs Ursula hicks "the best way of measuring economic development of a country is to covert national income in terms of real goods. Increase in real national income leads to increase in per capita income. Thus economic development can be measured only in terms of changes in national income.

Criticism.

As merely a gross measure of market activity, GDP only counts money transactions in the economy. GDP ignores everything that happens outside the realm of monetized exchange, regardless of the importance to well-being.

The World Bank itself recognizes many of these problems: Although they reflect the average incomes in a country, GNP per capita and GDP per capita have numerous limitations when it comes to measuring peoples actual well-being. They do not show how equitably a country's income is distributed. They do not account for pollution, environmental degradation, and resource depletion. They do not register unpaid work done.

Per Capita Income.

Another popular measure of economic development relates to an increase in the per capita real income of the economy over a period of time. Economists are one in defining economic development in terms of an increase in per capita real income or output. Mier defines economic development as "as the process whereby the real per capita income of a country increases over a long period of time subject to the stipulation that the number of people below an 'absolute poverty line' does not increase, and the distribution of income does not become more unequal."This indicator of economic development emphasize that for economic development the rate of increase in real per capita income should be higher than the growth rate of population.

Criticisms of PCI

Per capita income is not a good indication of a country's development is that it does not account for improving the longevity of human life nor the quality of the environment such as pollution, environmental degradation, health, education, etc., particularly in underdeveloped countries. So, in order for income and welfare increases to be sustainable, the growth process must not lead to serious environment damage nor lead to any sort of its own destruction in any other way.

1. An increase in PCI may not raise the real standard of living of the masses.

2. There is another possibility of the masses remaining poor despite an increase in the real PCI if the increased income goes to the few rich instead of going to the many poor.

3. The real PCI fails to take in to account problems associated with basic needs like nutrition, health, sanitation, housing, water and education. The improvement in living standard by providing basic needs cannot be measured by increase in real PCI.

4. The real PCI estimates fail to measure adequately changes in output due to changes in the price level.

5. International comparison of the real PCI an inaccurate due to exchange rate conversion of different countries into a common currency ie, US Dollars, through the use of official exchange rate.

6. PCI fails to measure changes in output due to changes in price level.

7. Does not show whether any increase in income goes to the rich or the poor.

8. International comparisons of real GNP per capita are inaccurate due to exchange rate considerations of different currencies into one standard currency.

The concern of development economists in recent years has shifted from economic growth to human development. The main reason for this shift is the growing recognition that the real objective of development is to enlarge people's option. Income is one of the option.—and an extremely important one. But it is not the sum total of human life. Education and literacy, health, physical environment, equality of opportunity to all people irrespective of sex, caste and creed, political freedom, etc., may be just as important as income.

Economic development has traditionally been measured in terms of GDP, GNP, PCI. But it is difficult to decide how human development is to be measured particularly in view of its various dimensions as pointed out earlier. The search for comprehensive measures that could capture the various dimensions of human development led to the formulation of some measures like PQLI, HDI, GEM, HPI,GDI. According to Paul Streeten, the strong argument in favor of these indexes is that they show up the inadequacies of other indexes such as GNP.

Physical Quality of Life Index

The Physical Quality of Life Index was developed for the Overseas Development Council in the mid-1970s by Morris David Morris, as one of a number of measures created due to dissatisfaction with the use of GNP as an indicator of development. PQLI might be regarded as an improvement but shares the general problems of measuring quality of life in a quantitative way. According to Morris: Physical Quality of Life Index (PQLI) is a measurement of the most basic needs of the people. As per this approach, development should be reflected in the improved economic status or the higher Physical Quality of Life of the people.

The Physical Quality of Life Index (PQLI) is an attempt to measure the quality of life or well-being of a country. The value is the average of three statistics: basic literacy rate, infant mortality, and life expectancy at age one, all equally weighted on a 0 to 100 scale. For each indicator, the performance of individual country is ranked on a scale of 1 to 100 were 1 represent the worst performance and 100 as the best performance by any country. A composite index calculated by averaging these three indices and if the index shows a rising tendency, it does means that the Physical Quality of Life of the people is improving and hence the country concerned is developing. PQLI does not measure economic development and total welfare. It is only an attempt to measure the quality of life or well-being of a country.

Criticisms

1. Morris admit that PQLI is a limited measure of basic needs It does not measure economic growth. Further it does not explain the changing structure of economic and social organization. It therefore, does not measure economic development.
2. Similarly, it does not measure total welfare. However, it measures the qualities of life, which are essential for poor.
3. Many societal and psychological factors like security, justice, human rights, etc are excluded.
4. Does not explain the changing structure of economics and societal development.
5. Arbitrary weights are given to each determining factors

Despite these limitations, the PQLI can be used to identify particular region of underdevelopment and groups of society suffering from the neglect or failure of social policy. The state can take up such policies which increase the PQLI rapidly along with economic growth.

The Human Development Index (HDI)

The HDI was introduced in 1990 as part of the United Nations Development Programme (UNDP) to provide a means of measuring economic development in three broad areas - per capita income, heath and education. HDI was devised and launched by Pakistani economist Muhabul ul Haq, followed by Indian economist Amruthya Sen in 1990.

The HDI tracks changes in the level of development of countries over time. Each year, the UNDP produces a development report, which provides an update of changes during the year, along with a report on a special theme, such as global warming and development, and migration and development. The introduction of the index was an explicit acceptance that development is a considerably broader concept than growth, and should include a range of social and economic factors.

The HDI has two main features:

A scale from 0 (no development) to 1 (complete development).

An index, which is based on three equally, weighted components:

1. Longevity, measured by life expectancy at birth
2. Knowledge, measured by adult literacy and number of years children are enrolled at school
3. Standard of living, measured by real GDP per capita at purchasing power parity.

HDI is used to distinguished whether the country is developed, developing and under developed.

On the basis of HDI values, countries are classified into three groups, namely,

a) High human development countries with HDI 0.80 and above,
b) Medium human development countries with HDI 0.500to 0.799
c) Low human development countries with HDI value below0.50.

As per human development report 2011 Norway with HDI value of 0.943 ranks first and Australia with a value of 0.929 ranks second. India with a HDI value of 0.547 ranks lowly 134th in terms of human development out of 187bcountries for which Human Development Report 2011 calculated the index. Democratic Republic of Congo with HDI value of 0.286 occupies the last place in HDI ranking.

The HDI is a very useful means of comparing the level of development of countries. GDP per capita alone is clearly too narrow an indicator of economic development and fails to indicate other aspects of development, such as enrolment in school and longevity. Hence, the HDI is a broader and more encompassing indicator of development than GDP, though GDP still provides one third of the index.

HDI as a measure of human development has following advantages

1. Besides income,, the HDI measure education and health and is the multidimensional rather than one dimensional.
2. It focuses the attention of the policymakers on the ultimate objective of development not just the means.

3. It is more meaning as a national average than GDP because there are much greater extremes in income distribution than in the distribution of life expectancy and literacy.
4. The HDI can be disaggregated by gender, ethnic group or geographical region and in many other ways – to present relevant policy measures.
5. An upward movement in HDI can be regarded as an improvement.

Despite the widespread use of the HDI there are a number of criticisms that can be made, including:

1. The HDI index is for a single country, and as such does not distinguish between different rates of development within a country, such as between urban and traditional rural communities.
2. Critics argue that the equal weighting between the three main components is rather arbitrary.
3. Development is largely about freedom, but the index does not directly measures this. For example, access to the internet might be regarded by many as a freedom which improves the quality of people's lives.
4. As with the narrow measure of living standards, GDP per capita, there is no indication of the distribution of income.
5. In addition, the HDI excludes many aspects of economic and social life that could be regarded as contributing to or constraining development, such as crime, corruption, poverty, deprivation, and negative externalities.

Human Poverty Index

The Human Poverty Index (HPI) is an indication of the standard of living in a country, developed by the United Nations (UN) to complement the Human Development Index (HDI) and was first reported as part of the Human Development Report in 1997. It was considered to better reflect the extent of deprivation in developed countries compared to the HDI. IT tries to arrive at an aggregate judgment on the extend of poverty in an economy. The HPI concentrates on the deprivation in the three essential elements of human life already reflected in the HDI: longevity, knowledge and a decent standard of living. Human Development Report 2009 used the following variables for calculating HPI: probability at birth of not surviving to age 40 (times 100); adult literacy rate; and unweigthed average of population. The HPI is derived separately for developing countries (HPI-1) and a group of select high-income OECD countries (HPI-2) to reflect socio-economic differences and the widely different measures of deprivation in the two groups.

In 2010 it was supplanted by the UN's Multidimensional Poverty Index. The MPI is the product of the multidimensional poverty headcount (the share of people who are multi-dimensionally poor) and the average number of deprivation each multi-dimensionally poor household experiences. HDR 2011 estimates MPI for 109 countries. The estimate shows that condition in countries falling in medium human development countries and low human development countries are particularly bad. In most of these countries more than 1/3 of the population suffers from multidimensional poverty. In India 53.7% of the population i.e, as many as 61.22 crore people suffer from multidimensional poverty. Not only this, 28.6 % of the population lives under condition of severe poverty.

Inequality adjusted HDI (IHDI)

HDR 2010 introduced Inequality adjusted HDI. IHDI takes into account not only a country's average human development, as measured by health, education and income indicators, but also how it is distributed. The IHDI accounts for inequalities in life expectancy, schooling and income. The IHDI will be equal to HDI when there is no inequality across people, but falls below the HDI as inequality increases. In this sense, the HDI can be viewed as the index of 'potential' human development while IHDI is the actual level of human development.

Gender-related Development Index

The Gender-related Development Index (GDI) was introduced in 1995 in the Human Development Report written by the United Nations Development Program. The aim of these measurements is to add a gender-sensitive dimension to the Human Development Index (HDI). The first measurement that they created as a result was the Gender-related Development Index (GDI). The GDI is defined as a "distribution-sensitive measure that accounts for the human development impact of existing gender gaps in the three components of the HDI" (Klasen). Distribution sensitive means that the GDI takes into account not only the average or general level of well-being and wealth within a given country, but focuses also on how this wealth and well-being is distributed between different groups within society. It measures economic development as HDI does, but take into account the 'inequality between men and women'.

Definition and calculation

The UNDP in its HDR 1995 has introduced GDI as a measure of economic development. The GDI is often considered a "gender-sensitive extension of the HDI" (Klasen). It addresses gender-gaps in life expectancy, education, and incomes. GDI attempt to capture achievements through the same set of basic capabilities as included in the HDI – life expectancy, educational attainment and income – but adjusted the HDI for gender inequality. In terms of life expectancy, the GDI assumes that women will live an average of five years longer than men. Additionally, in terms of income, the GDI considers income-gaps in terms of actual earned income.

The GDI cannot be used independently from the Human Development Index (HDI) score and so, it cannot be used on its own as an indicator of gender-gaps. Only the gap between the HDI and the GDI can actually be accurately considered; the GDI on its own is not an independent measure of gender-gaps. Greater the gender disparity in basic human development, lower is the country's GDI compared with its HDI. If there is no gender inequality in a country, its GDI coincides with its HDI.

Gender Empowerment Measure (GEM)

The Gender Empowerment Measure (GEM) is the United Nations Development Programme's attempt to measure the extent of gender inequality across the globe's countries, based on estimates of women's relative economic income, participations in high-paying positions with economic power, and access to professional and parliamentary positions. GEM indicates whether women are able to actively participate in economic and political life.

The GEM was designed to measure "whether women and men are able to actively participate in economic and political life and take part in decision-making" (UNDP, 1995, p. 73). The GEM tends to be more agency focused (what people are actually able to do) than well-being focused (how people feel or fare in the grand scheme of things). The GEM is determined using three basic indicators: Proportion of seats held by women in national parliaments, percentage of women in economic decision making positions (incl. administrative, managerial, professional and technical occupations) and female share of income (earned incomes of males vs. females). The GEM is thought to be a valuable policy instrument because it allows certain dimensions that were previously difficult to compare between countries to come into international comparison.

Thus GDI is an indicator of ‘gender inequality in basic capabilities’ where as the GEM is an indicator of ‘gender inequality in economic and political participation and decision making.

Gender Inequality Index (GII)

HDR 2010 introduced a new measure Gender Inequality Index (GII). It includes three critical dimensions for women – re productive health, empowerment and labor market participation. The index shows loss in human development due to inequality between female and male achievement in these dimensions. It ranges from 0, which indicate the women and men fare equally to 1, which indicate that women fare as poorly as possible in all measure d dimensions.HDR 2011 present GII for 145 countries. Sweden tops the list followed by Netherlands, Denmark and Switzerland. India occupies a lowly 129th position.

Kuznet’s inverted U shape curve (Kuznets hypothesis)

Prof. Kuznet is the first economist to study the relationship between economic growth and income distribution empirically. There has been much controversy among economists over the issue whether economic growth increases or decreases income distribution. Kuznet observes that in the early stages of economic growth relative income inequality increases, stabilizes for a time and then decline in the latter stages. This is known as the inverted U- shaped hypothesis of income distribution.

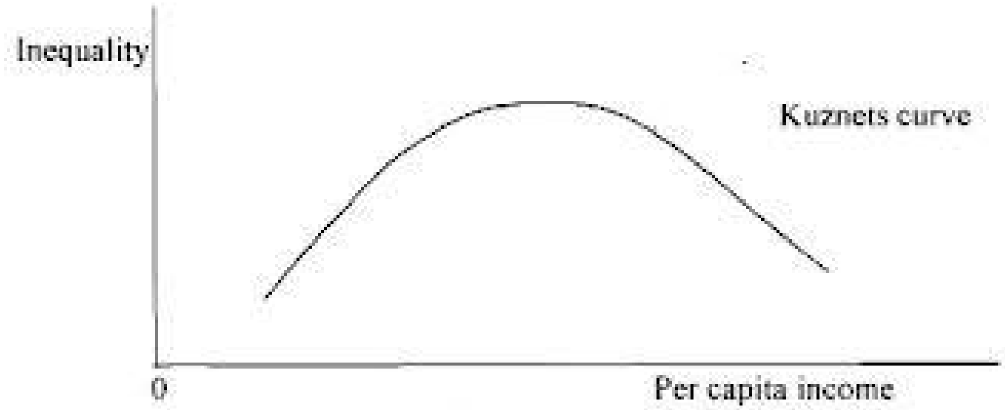


Fig. Inverted-U Hypothesis

It was in his 1963 study that Kuznet developed his inverted U shaped hypothesis by taking the data of 18 countries. He got Nobel Prize for this work in 1971. Kuznet suggested on the experience of the developed countries that historically there was a tendency for income inequality to increase first, and then to be reduced as countries developed from a low level. On the basis, he constructed different Lorenz curve for developed and under developed countries and derived their Gini coefficient. It showed that income inequalities were higher in under developed countries than in developed countries.

Gini coefficient is the best measure of the degree of inequality. It varies from 0 (complete equality) to 1 (complete inequality). The larger the coefficient, the greater the inequality. The Kuznets inverted U shape curve explains the changes in the income distribution as measured by the Gini coefficient in relation to the increase in per capita income, as shown in the following figure. More portion of the Kuznets curve lies to the right: income inequality falls with an increase in per capita income at higher levels of development. The inverted U shape curve hypothesis applies to the present developed and developing countries but the degree of inequality in the latter is greater than in the former.

Causes of increase in inequality with development.

There are many factors, which led to increase relative income inequality in the early stages of development in LDC's. When the process transition from a traditional agricultural society to modern industrial economy begins, it increases inequalities in income distribution. There are structural changes, which lead increasing employment opportunities, exploitation of new resources, and improvements of technology. All these leads to increase in per capita income in the industrial sector. The income of workers, managers, entrepreneurs etc, in urban areas increase more rapidly. But income per capita of workers agricultural and non- agricultural occupations in rural areas does not rise due to subsistence agriculture, defective land tenure system and rural backwardness. The workers in industrial sector have high income and employers earn large profit. Thus the modern industrial sector grows faster than the rural subsistent sector. As a result the relative share of income and profit in national income of this sector rises, more than in the rural sector.

The migration of rural population to urban areas does not provide gainful employment opportunities to unskilled and uneducated people in town and cities. Govt.in LDC’s find it difficult to pass and implement legislation and other economic measures relating to concentration of income and wealth among the rich due to political reason. Consequently the income inequalities increase. Above all, higher growth rate of population among the masses in LDCs increases the absolute number of people and hence relative inequality.

Causes for reduction in inequality with development

Kuznets give two reasons for decrease in inequality of income distribution when the country reaches high income level in the latter stages of development. First, the per capita income of the highest income groups falls because their share of income from property decreases. Second, the per capita income of lowest income groups rises when the government takes legislative decisions with respect to education and health services, inheritance and income taxation, social security, full employment and economic relief to either whole group or individuals.

As development proceeds, per capita income of the industrial sector increases. This, in turn, increases the demand for farm products and other products of rural and backward areas, which raise the per capita income of the people of these areas. This is what Hirchman calls “trickle down effect” and Myrdal calls “spread effect” of development. Above all, as development gain momentum the growth rate of population declines which increase per capita income.

Critical Appraisal

Kuznets inverted U hypothesis has been empirically tested and confirmed by some economists while others find it in other way. Karvis in his study of 11 developing countries and developed countries, Adelman and Morris in their study of 43 developing and 13 developed countries confirm the Kuznets hypothesis that the degree of inequality first increases at low level of development and decline at higher level of development. Montek S Aahulwalia in his analysis of the data for 60 countries finds that income inequality increases substantially in the early stages of development with reversal of this tendency in the latter stages.

Despite these the validity of the Kuznets inverted U shape – hypothesis has been questioned on the basis of the data taken by Kuznet and other for their studies. Kuznet taken a very small sample of developing and developed countries Critics pointed out that his analysis is based on 5 percent empirical information and 95 per cent speculation.

Amartya Sen’s Capability approach

The Capability Approach is defined by its choice of focus upon the moral significance of individuals’ capability of achieving the kind of lives they have reason to value. A person’s capability to live a good life is defined in terms of the set of valuable ‘beings and doings’ like being in good health or having loving relationships with others to which they have real access.

The capability approach (also referred to as the capabilities approach) was initially conceived in the 1980s as an approach to welfare economics. The Indian economist and philosopher Amartya Sen first articulated the Capability Approach in the 1980s, and remains most closely associated with him. It has been employed extensively in the context of human development, for example, by the United Nations Development Programme, as a broader, deeper alternative to narrowly economic metrics such as growth in GDP per capita. Here ‘poverty’ is understood as deprivation in the capability to live a good life, and ‘development’ is understood as capability expansion.

Sen first introduced the concept of capability in his Tanner Lectures on *Equality of What?* (Sen 1979) and went on to elaborate it in subsequent publications during the 1980s and 1990s. In this approach, Amartya Sen brought together a range of ideas that were hitherto excluded from (or inadequately formulated in) traditional approaches to the economics of welfare. The core focus of the capability approach is on what individuals are able to do (i.e., capable of).

Initially Sen argued for five components in assessing capability:

1. The importance of real freedoms in the assessment of a person's advantage
2. Individual differences in the ability to transform resources into valuable activities
3. The multi-variate nature of activities giving rise to happiness
4. A balance of materialistic and non-materialistic factors in evaluating human welfare
5. Concern for the distribution of opportunities within society.

3. Core Concepts and Structure of Sen's Capability Approach.

a). Functioning's and Capability

When evaluating well-being, Sen argues, the most important thing is to consider what people are actually able to be and do. The commodities or wealth people have or their mental reactions (utility) are an inappropriate focus because they provide only limited or indirect information about how well a life is going. Sen illustrates his point with the example of a standard bicycle. This has the characteristics of 'transportation' but whether it will actually provide transportation will depend on the characteristics of those who try to use it. It might be considered a generally useful tool for most people to extend their mobility, but it obviously will not do that for a person without legs.

The Capability Approach focuses directly on the quality of life that individuals are actually able to achieve. This quality of life is analyzed in terms of the core concepts of 'functioning's' and 'capability'.

- *Functioning's* are states of 'being and doing' such as being well-nourished, having shelter. They should be distinguished from the commodities employed to achieve them (as 'bicycling' is distinguishable from 'possessing a bike').
- *Capability* refers to the set of valuable functionings that a person has effective access to. Thus, a person's capability represents the effective freedom of an individual to choose between different functioning combinations – between different kinds of life – that she has reason to value. (In later work, Sen refers to 'capabilities' in the plural (or even 'freedoms') instead of a single capability set, and this is also common in the wider capability literature. This allows analysis to focus on sets of functionings related to particular aspects of life, for example, the capabilities of literacy, health, or political freedom.)

b). Valuation: Which Functioning's Matter for the Good Life?

Sen argues that the correct focus for evaluating how well off people are is their capability to live a life we have reason to value, not their resource wealth or subjective well-being. But in order to begin to *evaluate* how people are performing in terms of capability, we first need to determine which functionings matter for the good life and how much, or at least we need to specify a valuation procedure for determining this.

c). Evaluation: What Capability do People Have to Live a Good Life?

Evaluating capability is a second order exercise concerned with mapping the set of valuable functionings people have real access to.). This allows an open diagnostic approach to what is going well or badly in people's lives that can be used to reveal unexpected shortfalls or successes in different dimensions, without aggregating them all together into one number.

With how well people's lives are going, the Capability Approach can be used to examine the underlying determinants of the relationship between people and commodities, including the following (Sen 1999, 70-71):

(1) *Individual physiology*, such as the variations associated with illnesses, disabilityage, and gender.

(2) *Local environment diversities*, such as climate, epidemiology, and pollution. These can impose particular costs such as more or less expensive heating or clothing requirements.

(3) *Variations in social conditions*, such as the provision of public services such as education and security, and the nature of community relationships, such as across class or ethnic divisions.

(4) *Differences in relational perspectives*. Conventions and customs determine the commodity requirements of expected standards of behaviour and consumption, so that relative income poverty in a rich community may translate into absolute poverty in the space of capability

(5) *Distribution within the family* – distributional rules within a family determining, for example, the allocation of food and health-care between children and adults, males and females.

The diagnosis of capability failures, or significant interpersonal variations in capability, directs attention to the relevant causal pathways responsible. Note that many of these interpersonal variations will also influence individuals' abilities to access resources to begin with. For example, the physically handicapped often have more expensive requirements to achieve the same capabilities, such as mobility, while at the same time they also have greater difficulty earning income in the first place.

The Millennium Development Goals

The **Millennium Development Goals** (**MDGs**) are eight international development goals that were officially established following the Millennium Summit of the United Nations in 2000, following the adoption of the United Nations Millennium Declaration. All 189 United Nations member states and at least 23 international organizations have agreed to achieve these goals by the year 2015. The goals are:

1. Eradicating extreme poverty and hunger,
2. Achieving universal primary education,
3. Promoting gender equality and empowering women,
4. Reducing child mortality rates,
5. Improving maternal health,
6. Combating HIV/AIDS, malaria, and other diseases,
7. Ensuring environmental sustainability, and
8. Developing a global partnership for development.

Goal 1: Eradicate extreme poverty and hunger

- Reduce by half the proportion of people living on less than $1.25 a day
- Achieve Decent Employment for Women, Men, and Young People
- Reduce by Half, between 1990 and 2015, the proportion of people who suffer from hunger

Goal 2: Achieve universal primary education

- By 2015, all children can complete a full course of primary schooling, girls and boys

Goal 3: Promote gender equality and empower women

- Eliminate gender disparity in primary and secondary education preferably by 2005, and at all levels by 2015

Goal 4: Reduce child mortality rates

- Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

Goal 5: Improve maternal health

1. Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio
2. Achieve, by 2015, universal access to reproductive health

Goal 6: Combat HIV/AIDS, malaria, and other diseases

1. Have halted by 2015 and begun to reverse the spread of HIV/AIDS
2. Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it
3. Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

Goal 7: Ensure environmental sustainability

1. Integrate the principles of sustainable development into country policies and programs; reverse loss of environmental resources
2. Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.
3. Reduce by half the proportion of the population without sustainable access to safe drinking water and basic
4. By 2020, to have achieved a significant improvement in the lives of at least 100 million slum-dwellers

Goal 8: Develop a global partnership for development

1. Develop further an open, rule-based, predictable, non-discriminatory trading and financial system *Includes a commitment to good governance, development, and poverty reduction – both nationally and internationally*
2. Address the Special Needs of the Least Developed Countries (LDCs) Includes: tariff and quota free access for LDC exports; enhanced programme of debt relief and cancellation of official

bilateral debt; and more generous ODA (Official Development Assistance) for countries committed to poverty reduction

3. Address the special needs of landlocked developing countries and small island developing States
4. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term
5. In co-operation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries
6. In co-operation with the private sector, make available the benefits of new technologies, especially information and communications

Exercises

Short questions

1. Distinguish between Economic growth and economic development.

2.Distinguish between PQLI and HDI.

3.What is PQLI?

4.Distinguish between PQLI and HDI.

5.What is GDI?

6. Distinguish between GDI and GEM.

7. Explain Human Poverty Index

8. What is IHDI? How does it differ from HDI?

Short Essay

1. Write a note on Kuznets's inverted U hypothesis

2. Describe Sen's capability approach.

3. Distinguish balanced growth strategy and unbalanced growth strategy.

4. Bring out the measures of development.

5. Write a note on HDI.

6. Write a note on HDI.

7. Explain big push theory.

8.Explain Gender Empowerment measure.

9.Explain Gender Empowerment measure

10. Mention major Millennium development goal of UNDP.

11.Distinguish between Economic growth and economic development.

12. Explain Vicious circle of poverty.

13.What is balanced growth ?

14. Distinguish between PQLI and HDI.

15.What is balanced growth?

MODULE II

THEORIES OF DEVELOPMENT

The Vicious Circle of Poverty

The foremost obstacle to economic development of underdeveloped countries is the vicious circle of poverty that tends to perpetuate the low level of development. Prof. Ragner Nurks explained the idea in these words “It implies a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a state of poverty. For example, a poor man may not have enough to eat, being underfed, his health may be weak; being physically weak, his working capacity is low, which means that he is poor, which in turn means that he will not have enough to eat; and so on. A situation of this sort f relating to a country as whole can be summed up in the trite proposition: “A Country is poor because it is poor”.

The basic vicious circle from stems from the fact that in LDC's total productivity is low due to deficiency of capital, market imperfections, and economic backwardness and under development. According to Prof. Ragner Nurks, the vicious circle operates on both demand side and the supply side.

Demand side: The demand side of the vicious circle is that the low level of real income leads to a low level of demand, which, in turn, leads to a low of rate of investment and to deficiency of capital and all of them leads to low productivity and low income. This is shown in the following figure.

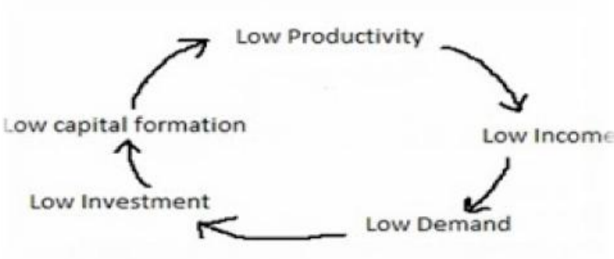


Figure 2.1

If a country is poor, productivity will be lower. It results in low income which leads to low demand due to lower purchasing power. When demand is lower by the consumer, investor decreases the level of investment and as a result capital formation remains lower. Consequently productivity will be lower. Hence, A country remains poor due to vicious circle of poverty on demand side.

Supply side: On the supply side**,** the vicious circle starts with low productivity. Low productivity leads to low real income. The low level of income means low saving. The low level of saving leads to a low investment and to deficiency of capital. The deficiency of capital, in turn, leads to a low level of productivity and back to low income. Thus the vicious circle is complete from the supply side. It is depicted in figure 4. The low level of real income, reflecting low investment and capital deficiency is a common feature of both the vicious circle.

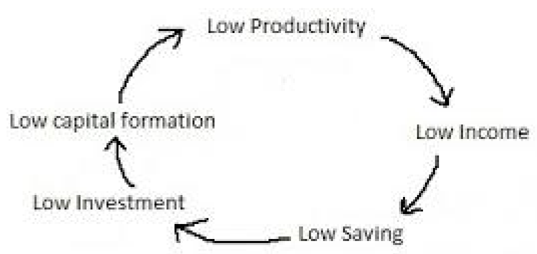


Figure 2.2

In supply side, Vicious Circle of Poverty once again shoots from low productivity which results are low income which leads to low saving. We know that (saving = investment) and when saving are lower, investment will be lower as a result capital formation will be lower which result is low productivity. Hence, A country remains poor due to Vicious Circle of Poverty on demand side.

Third vicious circle envelops underdeveloped human and natural resources. Development of natural resources is dependent upon the productive capacity of the people in the country. If people are backward, illiterate, lack in technical skill, knowledge and entrepreneur activity, the natural resources will tend to remain unutilsed, under \utilized or even misutilised. On the other hand, people are economically backward in a country due to underdeveloped natural resources. Underdeveloped natural recourse are therefore both a consequence and cause of backwardness of the people.

Prof. K N Bhattacharya recognizes "Poverty and underdevelopment of the economy are synonymous. A country is poor because it is underdeveloped. A country is underdeveloped because it is poor and remains underdeveloped, as it has not the necessary resources for promoting development. Poverty is a curse but a great curse is that is self-perpetuating."

How to break this vicious circle of poverty?

Remaining poor is certainly no crime. The accepting of poverty and allowing it to continue is certainly a crime. Briefly, the vicious circle of poverty can be broken in developing countries including Pakistan by adopting following measures.

(1) Increase in savings. The vicious of circle of poverty can be broken by making serious efforts in increasing the volume of real savings both at the level of in development the govt. The govt. can also mobilize foreign savings for capital formation country.

(2) Higher per capital growth rate. The per capital growth rate should be higher than the rate of growth of population. This objective be achieved by increasing the level of employment in the country and reducing the rate of population growth. If the rate of increase in real per capital income is the same as the rate of growth of population, the real income per person will remain unchanged.

(3) Efficient use of natural resources. The less developed countries (LDC) are not making the efficient use of the natural resources available to them. At present the multinational companies (MNCs) of the advanced countries are exploiting these resources more for their own economic benefits. The economic advantages of the natural resources must pass on to the benefits of the poor masses of the LDCs.

(4) Employment of human resources. Many of the less developing countries including Pakistan are faced with serious unemployment problem. The quality of labour force is also poor. The low level of literacy, malnutrition, absence of proper medical care etc are all barriers to economic development Effective measures have to be taken for sufficient investment in human capital to break the poverty barrier of the LDCs.

(5) Increasing the stock of capital goods. The LDCs can come out of the vicious circle pf poverty if the wealthy class is motivated to make their savings available for investment in productive activates rather than using their wealth on the purchase of urban real estates, precious metals etc.

(6) Technological advance. The people in less developed countries (LDCs) can break the poverty barrier by adopting and applying advance technologies which are appropriate to the resources available to them.

(7) Role of the advanced nations. The advanced nations san help the less developed countries in breaking the poverty barrier by:

(i) Expanding volume of trade with them (ii) Increasing the flow of private and public capital in basic infrastructure.(iii) Provision of direct aid in basic social sectors such as education, health etc.(iv) Provision of soft loans for development.(v) Writing off loans.

(8) **Role for the government.** The government in the less developed country is in the key position to deal effectively with social institutional obstacles to growth and breaking out the vicious circle of poverty. It can greatly root out political corruption and bribery. It can provide incentives to save and invest. It can increase agricultural production by introducing effective land reforms in the country.

Theories of economic development

Economic development is not a new concept. It has its root in the past. It has attracted the attention of economists, sociologist, and politicians from the ancient times. They propounded various theories of economic development to analyze and explain the mechanism of economic development. The classical economists were the earliest. The current economic thinking about the process of economic development has evolved during the last six decades. The contemporary models of development and under development explore the recent intellectual evolution in scholarly thinking about how and why development does or does not take place. They offer valuable insight and useful prospective on the nature of the development process.

The Big Push Theory.

The originator of this theory was Paul Rosenstein-Rodan in 1943. Further contributions were made later on by Murphy, Shleifer and Robert W. Vishny in 1989. The thesis is that a big Push" or a large comprehensive programme is needed in the form of a high minimum amount of investment to overcome the obstacles to development in an under developed economy and launch it on the path of progress. The theory of the model emphasizes that underdeveloped countries require large amounts of investments to embark on the path of economic development from their present state of backwardness.

This theory proposes that a 'bit by bit' investment programme will not impact the process of growth as much as is required for developing countries. In fact, injections of small quantities of investments will merely lead to wastage of resources. Paul Rosenstein-Rodan, approvingly quotes a Massachusetts Institute of Technology study in this regard, "There is a minimum level of resources that must be devoted to... a development programme if it is to have any chance of success. Launching a country into self-sustaining growth is a little like getting an airplane off the ground? There is a critical ground speed which must be passed before the craft can become airborne...."[1]

The three indivisibilities

According to Rosenstein-Rodan, there exist three indivisibilities in underdeveloped countries. These indivisibilities are responsible for external economies and thus justify the need for a big push. The externalities are as follows-

1. Indivisibility in production function
2. Indivisibility of demand
3. Indivisibility in the supply of savings

Indivisibility in production function

Indivisibilities in the production function may be with respect to any of the following:

- Inputs
- Processes
- Outputs

These lead to increasing returns (i.e., economies of scale), i.e., increase in output, income and employment and lowering capital output ratio. This can be achieved even in developing countries since at least one optimum scale firm can be established in many industries. But investment in social overhead capital such as power, transport, communications, housing, education i.e, must necessarily come before directly productive investment activities. Investment in social overhead capital is 'lumpy' in nature. Such capital requirements cannot be imported from other nations. Therefore, heavy initial investment necessarily needs to be made in social overhead capital (this is approximated to be about 30 to 40 percent of the total investment undertaken by underdeveloped countries). Social overhead capital is further characterized by four indivisibilities:

1. *Irreversibility in time*: It must precede other directly productive investments
2. *Minimum durability of equipment*: It has a minimum durability, thus make it very 'lumpy'
3. *Long gestation periods*: The investment in social overhead capital takes time to generate returns and its impact in the economy is not immediately or directly visible
4. *Irreducible minimum social overhead capital–industry mix*: Investment needs to be of a certain minimum magnitude and spread across a mix of industries, without which it will not significantly impact the process of growth.

   Most of the underdeveloped countries have been suffering from the shortage of social overhead capital, and it is one of the obstacles to development in such countries. In this way, the rapid economic development in underdeveloped economies requires a high initial investment in social overhead capital.

Indivisibility of demand

Developing countries are characterized by low per-capita income and purchasing power. Markets in these countries are therefore small. In a closed economy, modernization and increased efficiency in a single industry has no impact on the economy as a whole since the output of that industry will fail to find a market. A large number of industries need to be set up simultaneously so that people employed in one industry consume the output of other industries and thus create complementary demand.

To illustrate this, Rosenstein Rodan gives the example of a shoe industry. Assuming a closed economy, let us suppose that hundred disguised unemployed workers are employed in a shoe factory whose wages constitute an additional income. If these workers spend all their income on shoe they manufacture, the shoe market will have a regular demand and thus succeed. But in fact new workers do not spend their entire additional income on shoes and shoe factory will not find their market. That would be result in to the closure new factory. In this way the investment in a single project cannot widen the extend of the market.

To vary the example, suppose ten thousand unemployed workers are engaged in one hundred factories (instead of hundred workers in one factory) that produce a variety of consumer goods and spend their wages on buying them. The new producers will be each other's consumer and thus create market for their goods. The complimentarily of demand reduces the risk of finding a market and increases the incentive to invest. Hence the indivisibility of demand necessarily implies a high quantum of investment in complimentary industries for enlarging the size of market and increasing the incentives to invest without which the development process gets stuck up.

The situation may be different in an open economy as the output of the new industry may replace former imports or possibly find its market by way of exports. But even if the world market acts as a substitute for domestic demand, a big push is still needed (though its required size may now be reduced due to the presence of international trade).

Indivisibility in the supply of savings

High levels of investment require a corresponding high level of savings. We cannot always rely on foreign aid as the huge levels of investments in the different sectors need to be made not only once, but multiple numbers of times. Hence domestic savings are a must. But in an underdeveloped economy, saving is low due to the low income levels. To overcome this ,it is essential that when income increases due to an increase in investment Marginal rate of savings should be very much higher than average rate of saving. According to Rosenstein-Rodan "a high minimum quantum of investment requires a high volume of saving, which is difficult to achieve in low income underdeveloped countries the way out of it to have……high marginal rate of saving than average rate of saving."

Give these indivisibilities and external economies, the underdeveloped countries can successfully solve their problem only by a" big push" or a minimum quantum of investment. Thus favorable environment for development may be created in underdeveloped countries by a big push or minimum quantum of investment, and not by an isolated and small way.

Role of the State

The large-scale programme of industrialization advocated by this model requires huge investments which are beyond the means of the private sector. The investment in infrastructure and basic industries (like power, transport and communications) is 'lumpy' and has long gestation periods. The role of the state in this theory is therefore critical for investment in social overhead capital. Even if the private sector had the requisite resources to invest in such a programme, it would not do so since it is driven by profit motives. Many investments are profitable in terms of social marginal net product but not in terms of private marginal net product. Due to this there is no incentive for individual entrepreneurs to invest and take advantage of external economies. Therefore the responsibility of for the development of social overhead capital has to be borne by the state.

Criticism

Rodan's theory is an improvement over the traditional static equilibrium theory.The big push theory clearly brings into focus the need for a massive effort.

1. **Shortage of resources in underdeveloped countries**: Eugenio Gudin criticizes the theory of the big push on the grounds that underdeveloped countries lack the capital required to provide the big push required for rapid development. If an underdeveloped nation had ample capital supply and scarce factors, it would not be classified as underdeveloped at all. Limited resource availability is the first impediment to such countries. Though this problem may be overcome by foreign aids, industrialization may not take off as expected if the aid flows are volatile.

2. **Ignores the agricultural secto**r: With its heavy emphasis on industry, the model finds no place for agriculture. This is a gaping flaw in the theory, as in most underdeveloped countries it is this sector which is large and has labor surplus. Investments in agriculture need to go hand-in-hand with those in industry so as to stimulate the industrial sector by providing a market for industrial goods. If neglected, it would be difficult to meet the food requirements of the nation in the short run and to significantly expand the size of the market in the long run.

3. **Problems in mixed economies**: In a mixed economy, where the private and public sectors co-exist, the environment for growth may not be a conducive one. Unless there is a complementarity between the sectors, there is bound to arise competition between them, with the government departments keeping their plans confidential out of fear of speculative activities by the private sector. The private sector's activities are simultaneously inhibited due to lack of information of government policies and the general economic situation

4. Neglect of methods of production: Rather than capital formation, it is productive techniques which determine the success of a country in economic development. The big push model ignores productive techniques in its support for capital formation and industrialisation.

5. **Dependence on indivisibilities**: The emphasis of this theory on indivisibility of processes is too much, as investments need not necessarily be on such a large scale to be economic. Social reforms are ignored, which are vital if a country is to grow on the basis of its own resources and initiatives. Development is bound to intensify if social reform is a part of the industrialization process.

6. **Difficulties in execution and implementation**: The execution of related projects during the course of industrialization may involve unexpected or unavoidable changes due to revisions of plans, delays and deviations from the planned process. Hla Myint notes that the various departments and agencies involved in the process of development need to coordinate closely and evaluate and revise plans continuously. This is a challenging task for the governments of developing countries.[4]

7.**Lack of absorptive capacity**: The implementation of industrialization programmes may be constrained by ineffective disbursement,short-term bottlenecks, macroeconomic problems and volatility, loss of competitiveness and weakening of institutions. Credit is often utilized at low rates or after long time lags. There is often a loss of competitiveness due to the Dutch disease effect.

8.**Inflationary pressures**: It follows from the neglect of the agricultural sector that food shortages are likely to occur with industrialization. Though it would take time for investments in social overhead capital to yield returns, the demand would increase immediately, thus imposing inflationary pressures on the economy. Cost escalations may even cause projects to be postponed and the development process in general to slow down.

In spite of the above weaknesses and criticisms, the basic nerit behind the big push theory cannot be ignored. Really speaking this theory is not an exercise in futility ,rather it stresses the bold attempt and tremendous efforts ,which an underdeveloped countries should put in so as to achieve sustained growth.

Theory of Low Level equilibrium Trap

The low-level equilibrium trap is a concept in economics developed by **Richard R. Nelson**, in which at low levels of per capita income people are too poor to save and invest much, and this low level of investment results in low rate of growth in national income. As per capita income rises above a certain minimum level at which there is zero saving, a rising proportion of income will be saved and invested and this will lead to higher rate of growth in income.

Theory

The theory developed by **Richard R. Nelson** in his article ‘A Theory of the Low-Level Equilibrium Trap’ published in 1956. According to Nelson the malady of underdeveloped economies can be diagnosed as a stable equilibrium level of per capita income at or close to subsistence requirements. At this low stable equilibrium level, both the rate of investment and saving are low. If per capita income is increased above the minimum subsistence level, it encourages growth in population. The population growth, in turn pushes down per capita income again to subsistence level. Thus the economy is caught in low level equilibrium trap. Getting out of the trap requires increasing the rate of growth of income to the levels higher than the rate of increase in population. In Nelson's opinion following four conditions are conducive to trapping:

1. A high correlation between the level of per-capita income and the rate of population growth
2. A low propensity to direct additional per-capita income to increasing per-capita investment
3. Scarcity of uncultivated arable land
4. Inefficient production methods

Nelson uses a model with three equations.

- First, there is an income determination equation. Income depends on the stock of capital, the size of the population, and the level of technique.
- Second, net investment consists of saving-created capital plus additions to the amount of land under cultivation.
- Third, there is the population growth equation according to which in areas with low per-capita incomes short-run changes in the rate of population growth are caused by changes in the death rate, and changes in the death are caused by changes in the level of per-capita income. Yet once per capita income reaches a level well above subsistence requirements,

further increases in per-capita income have a negligible effect on death rate. With these three sets of relationships, it is easy to see that an underdeveloped economy is caught in a low-level trap.

Income determination equation

In first case, the economy is at minimum subsistence level of per capita income. When per capita is less than that of the minimum subsistence level the population decreases. After the stationary point, the per capita income increases then the subsistence level population increases until it reaches a physical limit. Population growth increases till it reaches its upper physical limit after which it declines. The declines occurs because at high per-capita income levels, people become conscious about their living standards and try to adopt a small family norm.

New investment is equal to capital created out of savings

In this case there is a certain level of income in the economy with no savings as all the income is spent on consumption. Also the level of investment is zero. There is negative investment in the economy when savings are negative implying a situation where consumption is greater than income i.e. people live on past capital. However when per capita income rises then savings also rises from zero level which leads to rise in the investment level in the economy. As there is continuous increase in the per capita income there is a rising proportion of total income saved and invested.

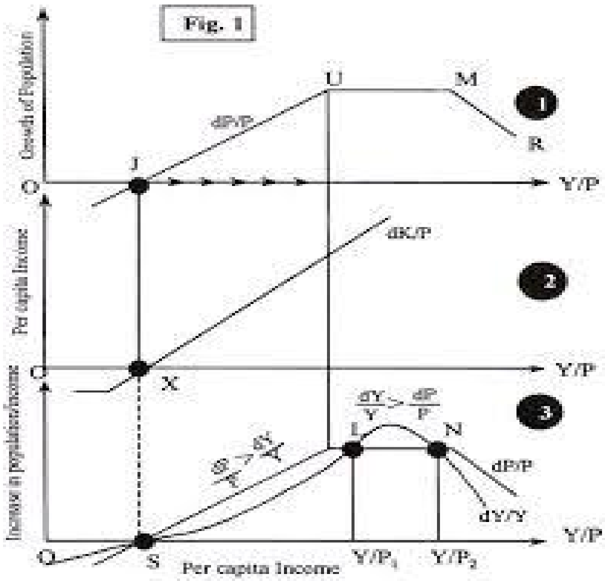
Population growth equation

Whenever the per capita income reaches a level above the subsistence level, any further increase in it will have a negligible effect on death rates. Moreover, changes in death rate are due to changes in per capita income.

Starting from this low level equilibrium trap, any small increase in per capita income will not be able to sustain itself or lead to further increase in per capita income because the rate of growth in population is higher than the rate of growth in total income. Consequently, per capita income will fall to previous low equilibrium level.

This happens until the time rate of growth in population is greater than the rate in growth of total income. It is only when the level of per capita income is increased by a discontinuous jump that the country can hope to come out of the low-level equilibrium trap, because the rate of growth exceeds the rate of growth of population. Nelson's thesis advocates that if the country is to break the shackles of low-level equilibrium trap, its rate of growth of total income must be higher than 3 percent per year. This can be done only when, to use Leibenstein's terminology, that amount of minimum effort is undertaken which pushes up the level of per capita income.

Figure 2. 3



The nelson's thesis is explained in the figure 2.3 Panel I, II and III.

Panel I of the diagram deals with the population growth equation showing the relationship between per capita income (PCI) and population growth. The level of PCI ($\frac{Y}{P}$) is measured on the horizontal axis and the percentage growth rate of population ($\frac{\Delta P}{P}$) measured on the vertical axis. The point S' on the horizontal axis is the minimum subsistence level of per capita income. At this, level population is stationary. If we move above S' along the growth curve of population, the growth rate of population increases up to the "upper Physical limit" U, with increase in the PCI above the minimum subsistence level. For some times the population will grow at this level with rise in the PCI (between UM) and then it starts declining from point M.

In panel II the per capita rate of investment out of saving ($\frac{\Delta K}{P}$) is measured on vertical axis and per capita income ($\frac{Y}{P}$) on the horizontal axis. The curve ($\frac{\Delta K}{P}$) is the growth curve of investment which shows the relationship between rate of investment and per capita income. This curve intersects the horizontal axis at point X which is the minimum subsistence level of per capita income where the investment per capita ($\frac{\Delta K}{P}$) is zero since the entire income is spend on consumption (zero saving). To the left of this point, there is negative investment. If we move above point X ,the per capita rate of investment will rise even beyond the upper physical limit of growth rate population as denoted by point U in panel A.

Panel III, of the diagram deals with the low-level equilibrium path by analyzing the relationship between the growth rate of population and growth rate of income. The point T is the low level of equilibrium trap where rate of investment is zero (at point X) , population growth is zero and per capita income is at the subsistence level. This is the point of zero growth rates where the growth rate of income equals the growth rate of population on the horizontal axis. For any increase in the per capita income in between T and C the growth rate population is higher than the growth rate of income, so that the economy is pushed back to T, the point of stable equilibrium (the trap). To get out of this “trap” the economy requires “a discontinuous jump” beyond the per capita level C so as to reach the new point of unstable equilibrium L. Beyond this point income grows at a faster rate than the growth rate of population which is stable at the upper physical limit. Increase in the per capita income is cumulative till the point N, where the growth rate of income is equals the growth rate of population. Point N is the new stable equilibrium point. Again, beyond N, further government action is required to raise the growth rate of income above the growth rate of population.

Factors that avoid trap

Nelson points towards number of factors to escape the low- level equilibrium trap.

- There should be a favorable socio-political environment in the country.
- The social structure should be changed by laying greater emphasis on thrift and entrepreneurship.
- Measures should be adapted to change the distribution of income, at the same time enabling accumulation of wealth by investors.
- There should be an all-pervading government investment programme.
- Income and capital should be increased by obtaining funds from abroad.
- Improved production techniques should be used to utilize existing recourses more fully so that income is increased from given inputs.

To escape the low-level equilibrium trap in underdeveloped countries requires the simultaneous adoption of all these measures so that the growth rate of income is increased more than the growth rate of population.

Balanced Growth Theory

The balanced growth theory is an economic theory pioneered by the economists like **Ragnar Nurkse (1907–1959), Paul Rosenstein-Rodan and Arthur Lewis.** According to the strategy of balanced growth, to achieve the goal of economic development, simultaneous investment should be made in different sectors of the economy, so that the balanced growth is achieved. The theory hypothesises that the government of any underdeveloped country needs to make large investments in a number of industries simultaneously. This will enlarge the market size, increase productivity, and provide an incentive for the private sector to invest. Nurkse was in favour of attaining balanced growth in both the industrial and agricultural sectors of the economy. Nurkse and Paul Rosenstein-Rodan were the pioneers of balanced growth theory and much of how it is understood today dates back to their work.

Rosenstein-Rodan theory of balanced growth.

Rosenstein-Rodan was the first economist who propounded the theory of balanced growth without using these words in his 1943 article. He argued that the whole of the industry to be created in eastern and south Eastern Europe should be treated and planned like one huge firm or trust. His main contention is that “often SMP (Social Marginal Product) of an investment is different from its PMP (Private Marginal Product) and that when a group of industries is planned together in accordance with their SMPs, the rate of growth of the economy is greater than it would have been otherwise. “This is because an individual entrepreneur is interested only in the PMP of the investment and is not likely to have an accurate assessment of its SMP. It is the complimentarily of different industries which leads to the most profitable investment from the standpoint of the society. He gives an example of shoe factory. Suppose a shoe factory was set up in a region with 20000 workers, and if all workers were spend their wages to buy shoes , the shoe industry will flourish. But it is not possible. If instead , a whole series of industries were started which produces the consumption goods on which consumers would spend all their income , all the industries would expand via multiplier process. The planned creation of such a complimentary system would reduce risk.

Nurkse theory of balanced growth.

The very idea has been developed and elaborated by Ragner Nurkse in his thesis. According to Nurkse, Vicious circle of poverty are at work in underdeveloped countries which retard economic development. If, however, they broken, economic will follow.

How to break vicious circle? Individual investment decision cannot solve the problem. According to Nurkse the vicious circle can be broken by enlarging the size of the market. However, it is not possible by individual investment efforts. The individual investment have the risk whether their product will find a market not. It is possible only when different persons invest in different industries leading to a wide range of industries. Different industries will support each other, will provide an enlarged market for products. The rate at which one industry can grow is inevitably conditioned by the rate at which the other industries grow.

Through the application of capital over a wide range of activities, the general level of economic efficiency is raised and the size of the market is enlarged. This is the way to break the vicious circle. The result of overall investment is the enlargement of market because people working in a number of complimentary projects would become each other’s consumer. Thus the overall expansion of investment project, enlargement of market and the development of complimentary industries are important ingredients of balanced growth, which can break the vicious circle of poverty, and release the factor of growth and expansion. The market can be enlarged through investment in various industries, better salesmanship and publicity, liberal trade policy, reduction of price and expansion of infrastructure facilities.

The doctrine of balanced growth requires a balance between different sectors of the economy during the process of economic growth. Nurkse was in favour of attaining balanced growth in both the industrial and agricultural sectors of the economy. He recognized that the expansion and inter-sectoral balance between agriculture and manufacturing is necessary so that each of these sectors provides a market for the products of the other and in turn, supplies the necessary raw materials for the development and growth of the other.

A balance is also required between domestic sector and the foreign sector. Meier and Baldwin observes that: "export revenue is an important source for financing development; import rise as production and employment expand; and domestic trade itself requires increasing imports of necessary materials and equipment. To pay for these rising imports, and to allow exports to finance development as much as possible, the country cannot expand its domestic trade at the expense of its foreign trade. The domestic sector must grow in balance with the foreign sector."

In the words of Nurkse: "balanced growth is a good foundation of international trade, as well as a way of filling the vacuum the periphery." He supports an improvement in transport facilities and reduction in their cost, abolition of tariff barriers and creation of customs union so that the market may be enlarged both in geographical and economic sense.

Criticism

The doctrine of balanced growth has been severally criticized by Hirschman ,singer, Kurihara and others on the following grounds.

- **Rise in cost.** Simultaneous establishment of a number of industries is likely to raise money and real cost of production, and so make them economically unprofitable to operate in the absence of sufficient capital equipments, skills, cheap power, finance and other necessary raw materials.
- **No attention to reducing cost**. Kindleberger observes that instead of star5tin with new industries, Nurke,s theory does not consider the possibility of cost reduction in existing industries.
- **Disproportionality in factors.** Another problem in underdeveloped countries is the disproportionality in the factors of production. In some countries, labor is abundant but capital and entrepreneurial skill are scarce. While in other capital and labor are scarce but other resources are in abundance. This is a great hindrance to the practical application of the concept of balanced growth.
- **Balanced growth is not essential for induced investment**. According to Kurihara, "Balanced growth is not, as Nurks supposes, to be desired to induce private investment but to be desired for its own sake, as far as an underdeveloped country is concerned.
- The Nurkesian doctrine of balanced growth is primarily related to private enterprise economy where the need for planning does not arise. In fact, simultaneous investment in all sectors requires planning direction and coordination by the government.
- **Fails as a theory of development.** According to Hirchman the doctrine of balanced growth fails as a theory of development. Development implies the process of change of one type of

economy into another more advanced type. But the doctrine of balanced growth would involve the super imposition of an entirely new self - contained modern industrial sector upon the stagnant and equally self contained traditional sector.

- **Capital lumpiness not essential for development**. Although capital 'Lumpiness' of many social economic overheads is often given as a reason for investing large sum of money immediately, yet the experience of many developed countries suggests that many services can be provided initially at low investment doses. As dr Singer says “thing Big’s sound advice to underdeveloped countries but “Act Big is unwise counsel if it spurs them to do more than their recourses permit.”

  To sum up in the words of Lewis, “in development programmes all sectors of the economy should grow simultaneously, so as to keep a proper balance between industry and agriculture and between production for home consumption and production for export... the logic of this proposition is an unassailable as its simplicity”.

The Unbalanced Growth Theory

The concept of unbalanced growth is the opposite of the doctrine of balanced growth. According to this concept, investment should be made in selected sectors rather than simultaneously in all sectors of the economy. No underdeveloped country possesses capital and other resources in such quantities as to invest simultaneously in all sectors. Therefore investments should be made in a few selected sectors or industries for their rapid development and the economies accruing from them can be utilized for the development of other sectors. Thus the economy gradually moves from the path of unbalanced growth to that of balanced growth. Supporters of the unbalanced growth doctrine include **Albert O. Hirschman**, **Hans Singer**, **Paul Streeten** and **Marcus Fleming**. The theory is generally associated with Hirschman. He presented a complete theoretical formulation of the strategy.

Hirschman contends that deliberate unbalancing of the economy according to the pre-designed strategy is the best method of development and if the economy is to be kept moving ahead, the task of development policy is to maintain tension, disproportions and **disequilibrium**. Unequal development of various sectors often generates conditions for rapid development. More-developed industries provide undeveloped industries an incentive to grow. Hence, development of underdeveloped countries should be based on this strategy. Hirschman states “If the economy is to be kept moving ahead, the task of development policy is to maintain tensions, disproportions and disequilibria”. This situation exists for all societies, developed or underdeveloped.

According to Hirschman, when new projects are started they appropriate external economies created by preceding projects and create external economies that may be utilized by subsequent ones. There are two types of projects according to him.

Convergent series an divergent series of investments.. The project that appropriate more external economies than they create is called convergent series of investment. Hirschman also calls them induced investments for they are net beneficiaries of external economies. The projects that create more external economies than they appropriate is called divergent series of investment. From the point of view of the economy, the divergent series may have greater social desirability, Where as convergent series may be less desirable from social view point. Therefor development policy should aim at the prevention of convergent series of investment and promotion of divergent series of investment.

Development can only take place by unbalancing the economy. This is possible by investing either in social overhead capital (SOC)or in directly productive activities (DPA).The former creates external economies while latter appropriate external economies.

Unbalancing the economy with social overhead capital (SOC)

Social Overhead Capital (SOC) is defined as basic services without which primary, secondary and tertiary productive activities cannot function. In a narrow sense, Social Overhead Capital is defined to include transportation and electricity, while in a wider sense, it includes all public services, including law and order and education. A large investment in SOC will encourage private investment later in directly productive activities (DPA).For example, cheaper supply of electricity may stimulate the establishment of small industries, commerce and trade. Unless SOC investment provide cheaper or improved services, Private investment in DPA will not be encouraged. In this way the SOC approach to economic development is to imbalance the economy so that subsequent investment in DPA is stimulated.

In the words of Prof. Hirschman, "investment in SOC is advocated not because of its direct effect on output, but because it permits and in fact invites directly productive activities to come in… SOC is required as a pre-requisite of DPA investment". This sequence of investment(from SOC to DPA) is called the 'pressure relieving investment'or 'development via excess capacity of DPA.'

Unbalancing the economy with directly productive activities (DPA)

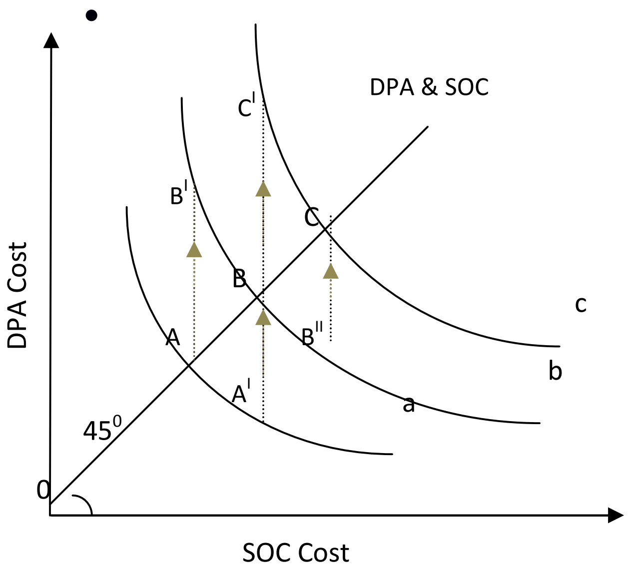
An imbalance can be created in the economy by making investment in DPA at the first instance. A government might directly or indirectly invest in DPA instead of investing in SOC. If investment is first made in DPA the shortage of SOC may raise the cost of production substantially. The rise the cost of production is bound to increase the price level as well. This increase in price may create Unfavorable climate for fresh investment in DPA.As a result the growth processes may be hampered. To avoid this, the political pressure may be built up on the government to encourage the investment in SOC . This political pressure will stimulate investment in SOC. This sequence of investment (from DPA to SOC) is called the 'pressure creating investment' or 'development via shortage of SOC".

The path to development

According to Hirschman, there are two path of development. The first path is the sequence (from SOC to DPA) development via excess capacity of SOC and second path is the sequence (from DPA to SOC) development via shortage of SOC. Of the two Hirschman prefer the first path which is self propelling. This can be explained with diagram.

Figure2.4

Unbalanced Growth Theory



In the above diagram, the unit of investment in SOC are measured on X axis and the unit of investment in DPA are measured on Y axis. The curve ‘a’ ‘b’ and ‘c’ are “isoquants” showing the various combinations of SOC and DPA. They result in the same national product at a given time. As we move from a to b and b to c curve, we reach a higher level of gross national product.

The doctrine of unbalanced growth is based on two assumptions: firstly, SOC and DPA cannot be developed simultaneously, and secondly, the sequence of expansion should be such that may maximize ‘induced’ decision making.

If the way of development via excess capacity of SOC is adopted, the economy will proceed on the dotted line AA’BB”C. When the economy increase SOC from A to A’ on the same iso-quant a, the induced DPA increases from A to B’ until balance is resorted at B Where the whole economy is on higher iso-quant b. At this point the economy is on a higher level of output. The higher output thus achieved induces government to increase SOC further to B” from, DPA also follows the suit from B to pony C via C’ on higher iso-quant.

If the economy follows the other path to development via shortage of SOC , the economy moves along the thick line AB’BC’C. When DPA increases to B’ from A, SOC has to move A’ and then to B. when DPA increased further to C’ from B, the balance requires SOC to increase to C via B”.

It is to be noted that the development path via excess SOC capacity is more continuous and smooth than the second path. Hirschman calls it “self propelling”. To him “development via SOC shortage is an instant of the disorderly, compulsive sequence, while via excess SOC is essentially permissive and invite investment in DPA.

Linkage Effects

Creating unbalance is pre-requisite of economic growth according to Prof. Hirschman. However, the problem is one of finding the kind of imbalance that is likely to be most effective. Normally, projects create both forward and backward linkages. Investment should be made in those projects that have the greatest total number of linkages. Projects with many linkages will vary from country to country; knowledge about project linkages can be obtained through input and output studies.

Forward Linkage. A forward linkage is created when investment in a particular project encourages investment in subsequent stages of production. Forward linkages refer to the growth of certain industries owing to the initial growth of those which supply raw materials. Expansion of steel industry, for example, will encourage industries making steel furniture, automobiles, machines, tools etc, using steel as their basic input.

Backward linkage. A backward linkage is created when a project encourages investment in earlier stages of production. Growth of a set of industries stimulates the growth of those which supply raw materials. Setting up a steel plant, for example, would stimulate the demand for steel crap, coal and related goods. Production of this good will accordingly increases. These are backward linkage. Industries other generating maximum linkage ought to be developed first. According to Prof Hirschman, intermediate industries such as of steel and coal are expected to generate maximum linkage.

Last industries first

Prof.Hirschman favored the setting up of last industries first. "In making industrial products, a developing country need not undertake all the stages of production simultaneously. It can begin with the manufacture of durable consumer goods at the final stages of production. It can import many converting, assembling and mixing plants for final touches to almost finished products. In this way, the country can turn out finished consumer goods that it was previously importing, and then move on to the higher stages of production – to intermediate goods and machines through backward linkage effects.

Backward linkage effects are the combined result of several last stage industries in a country. A backward linkage effect is produced by increase in demand. Therefore, when the demand for import replacing commodities increases, it justifies some domestic last stage production. Hirschman advocate giving subsidies or protection to import to replacing industries. Prof. Hirschman calla them import enclaving industries which have been very significant backward linkage effects. The underdeveloped country does not give any importance to the role played by export in the economic development. They treat them as step child. Consequently, the export do not expand and thereby fail to produce forward linkage effects within the economy. Keeping these things in view, Hirschman suggests that the export promotion is the only practical way of achieving rapid industrialization via import substitution.

Critical appraisal.

The doctrine of unbalanced, as propounded by Hirschman, is a heroic attempt at ponting out the way to accelerate economic development for underdeveloped countries. It is realistic and takes in to account almost all aspects of development planning. The discussion of forward and backward linkage effects together with last stage production is highly useful. Hirschman's stress on export promotion and import substitution further introduces a touch of realism. Unless the SOC path of economic development is followed by the state, it will not encourage private investment in DPA, because private enterprise in an under developed country is unable to create the necessary economic surplus required for development, to carry it further and even to sustain losses He therefore, appears to be in favor of mixed economy.

The doctrine of unbalanced growth is, however, not free form certain limitations.

- **Insufficient attention to the composition, direction and timing of unbalanced growth.** What is the optimum degree to which imbalance should be created in order to accelerate growth, which are the 'growing points'.Thes e are unanswered questions in this theory. This theory leaves too much to chance.
- There is little discussion on how to overcome discrepancies between private and social profitability's of development projects.
- **It neglects agriculture**. In heavily-populated countries with agricultural economies, neglect of agriculture could be suicidal. Shortage of agricultural goods can emerge as a serious constraint to industrialization; unless income from agricultural goods expands, the market for industrial products remains limited. Unbalanced growth can also lead to emergence of inflationary pressures in the economy, as a shortage of agricultural commodities will push up commodity prices.
- This theory is useful in those countries where there is significant state control. For instance in socialist countries, this strategy is followed with some success. In a socialist society, the consumption of all people is maintained at a modest level, thus reducing demand for consumer goods.
- **Neglect resistance**: Streeten pointed out that " the theory concentrate on stimuli to expansion and tends to neglect or minimize resistance caused by unbalancing by unbalanced growth ". For instances, Hirschman neglects resistance in attitudes created by an imbalances. When development is the outcome of deliberate unbalancing the economy, the business attitudes change due to shortage and tensions, and there is lot of oppositions and hostility. Hirschman neglects this type of reactions on the part of the existing institutions in under developed countries.
- **Beyond the capacity of under developed countries**. Investment creates imbalances thereby creating pressure and tension in the growth process which are overcome by inducement mechanism. But pressure and tension are bound to be serious in underdeveloped countries thereby hampering the process of development.
- **Lack of basic facilities.** There may be lots of difficulties in procuring technical personal, raw materials and basic facilities like power and transport and even in finding out an adequate domestic and foreign market for the products.

- **Linkage effect--** Hirschman's analysis of the "Linkage effects "suffers from the fact that it is not based on the data pertaining to an underdeveloped country where social overhead facilities are not fully developed for a generation or so.

- **Too much emphasis on investment decision.** Hirschman lays too much emphasis on investment decision as compared to other important decisions essential for development.

  But underdeveloped country need not only investment decision but also administrative, managerial and policy decision.

Despite these weaknesses the technique of unbalanced growth has come to be recognized as a novel technique for the development of underdeveloped countries. Russia was the first economy to adopt it and has been successful in accelerating its rate of economic growth within a short period of time. India has also followed the suit by adopting this technique with the second five year plan.

Critical minimum effort theory

In his book "Economic Backwardness and Economic growth", **Prof. Harvey Libenstein** has propounded his well known 'Critical Minimum Effort theory or Thesis'. The provides an attempt to solve the problem of economic development faced by overpopulated and under developed countries. According to him underdeveloped countries are characterized by the vicious circle of poverty that keeps them around a low per capita income equilibrium state. The way out of this is a certain "critical minimum effort" which would raise the per capita income to a level at which sustained development could be maintained. In order to achieve the transition from the state of backwardness to the more developed state where we can expect steady secular growth it is a necessary, though not always sufficient, condition at some point the economy should receive a stimulus to growth that is greater than a critical minimum size."

The theory states that the economic growth in underdeveloped countries is not possible unless a certain minimum level of investment is injected into the system as consolidated a dose that pulls the system out of backwardness. This minimum level of investment is called "critical minimum effort. In the words of Libenstein, "A sufficiently large minimum effort is necessary at the outset if the necessary minimum is to be achieved." According to Libenstein, every economy is under the influence of two forces –'shocks' and 'stimulants.' Shocks refers to those forces which reduce the level of output , income ,employment and investment etc,. Thus shoks depress the development forces. On the contrary stimulants refers to those forces which raise the level of income, output, employment and investment etc,. Stimulants encourage the development forces.A country is said to be underdeveloped if the impact of shocks is stronger than the impact of stimulus. A country is said to be developed if the impact of shocks is weaker than the impact of stimulants. It is only when the income raising factors are stimulated much beyond the income depressing factors that the critical minimum is reached and the economy would be on the path to development.

Growth Agents. The rational of the critical minimum effort thesis rests on the existence of certain favourable economic conditions so that the income increasing forces expand at the rate higher than the income depressing forces. In the development process such conditions are created by the expansion of "growth agents". The typical growth agents are entrepreneur, the investor, the saver and the innovator. The growth contributing activities result in the creation of entrepreneurship , the increase in the stock of knowledge , the expansion of productive skill of the people and the increase in the rate of saving and investment.

Incentives

According to Libenstein, whether or not growth agents expand will depends mainly upon the incentive efor further expansion. The incentives are of two types:

(i) Zero sum incentives
(ii) Positive sum incentives

i). **Zero sum incentives**. Zero sum incentives are those which exercise zero effect on economic growth. They do not raise national income but have only distributive efforts. It consists of trading risk, non- trading or speculative activities and transference of income and profit from one section of people to another. They are carried on in order to secure greater monopolistic position and political power. The zero sum incentives are not conducive for economic growth.

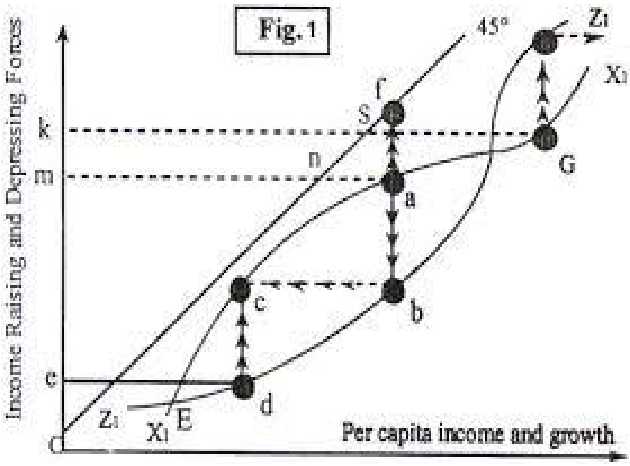
ii). **Positive sum incentives**. Positive sum incentives lead to economic growth and enhance the national income. It is very essential for economic development. These activities include the productive investment, use of technical knowhow, exploration and exploitation of the new market and use of scientific discoveries and innovations. They try to raise level of national income, output, investment, saving and employment.

According to Lebenstein even if some entrepreneurs undertake some positive some activities, it will be soon degenerated and unfortunately directed towards zero- sum activities in the absence of net growth in the economy.It is, therefore necessary that the minimum efforts should be sufficiently large to create an environment essential for the persistence of positive sum incentives. In underdeveloped countries certain influences which work against the posive change or depressed per capita income, are as follows :1) the zero sum activities of of entrepreneur are directed towards the maintenance of present economic privilege; 2) the conservative activities of both organized and unorganized workers; 3) increase in nonproductive activites;4) greater population growth;5) high capital output ratio.

To overcome these influences which keep the economy in a state of economic backwardness, a sufficiently large critical minimum effort is required to sustain a rapid rate of economic growth which should stimulate positive sum incentives and create forces for counteracting zero sum incentives. As a result of these the per capita income would rise and tend to increase the level of saving and investment, which in turn leads to:a) an expansion of growth agents;2)The creation of social and environmental condition that promote social and economic mobility;3) a fall in the effectiveness of factors restricting growth;4) the expansion of secondary and tertiary sector. In the words of Lebenstein "the development of an atmosphere that leads to change is more conducive to economic and social changes, and especially an environment that leads to eventual fertility decline and an eventual decline in the rate of population growth."

The theory of critical minimum effort has been illustrated by means of the diagram given a head.

Figure **2.5**



X axis represent per capita income (PCI) and induced income growth and Y axis represent per capita income and induced income decline. The 45^0 line measures induced increase and decreased in income. x_t x_t Curve represent stimulants and z_t z_t curve shows stocks. E is the equilibrium point where the two forces are in balance. If the stimulants raise PCI from the equilibrium level *oe* to *om*, the stimulants, generated will raise the PCI level by *na*. But at this level, the income depressing forces(shocks) , fb are greater than the income raising forces(stimulus). These will therefore generate the downward path *abcd*, until it reaches the equilibrium point E.thus the system will once again fall to subsistence level.

Solution to this problem is such a rise in the level income where stimulants are stronger than the shocks so that the growth in the income become self sufficient. It is only when the investment programme raises PCI to ok level the path of sustained growth starts. The income raising forces generated at ok will raise the income level to *sG* which will, in turn ,generate the path of endless expansion of PCI, as shown by the raising arrow rising above G. Raising per capita income to *ok* level and beyond point G is the critical minimum case.

For sustained development, it is imperative that initial investment level must be above certain minimum level in order to overcome income depressing forces. But the critical minimum effort need not be made all at once. It would be more effective if it is broken up to series of small effort. In the figure *ee* represent low PCI and *mm* the critical minimum PCI level. The gap between the areas is divided in to Area I and Area II. The Area III above *mm* is of self sustained growth. If *oa* is the PCI income to start with, the initial injection of investment would raise PCI *ob* . the second injection of investment would raise PCI by *cd* so that the critical minimum level mm is reached. If the investment is not optimally timed ,the PCI would follow *cy* path towards the low equilibrium level *ee.*

Population growth as a function of per capita income.

Leibenstein theory recognizes population growth as a function of per capita income. It is closely related to various stages of economic development. At the subsistence equilibrium level of income, fertility and mortality rate are the maximum consistent with survival rate of population. If the per capita income increased above the subsistence level the mortality rate falls without the drop in the fertility. The result is an increase in the rate of population. Thus, an increase in the per capita income tends to raise the growth rate of population. It is only up to a point Beyond that an increase in per capita income lowers the fertility rate and as development gain momentum, the rate of population growth declines. Increased specialization following rising income levels and the consequent social and economic mobility make it a difficult and costly affair to support a large family. Hence, growth rate of population becomes constant and then starts declining gradually as the economy economy gradually advances towards the path of sustained development. According to Leibenstein, a biologically maximum growth rate may be about 3 or 4 percent. Leibenstein, thus, suggest to make sufficiently necessary critical minimum effort so as to control such a very high population growth.

Critical appraisal.

1. **Population growth related to death rate**. The theory is based on the assumption that the rate of growth of population is an increasing function of the level of per capita income up to a point, but beyond that it is a decreasing function of the latter. But the first process is related to the decline in the mortality rates due to the advancement of medical science in underdeveloped countries and not to an increase in the level of percapita income.
2. **Decline in birth rate not due to increase in per capita income.** Similarly the decline in the birth rate cannot be attributed to an increase in the per capita income at the critical minimum level which surpasses the growth rate of population, as is supposed by Lebenstein. His conclusions are based on advanced western countries and Japan. But in under developed countries the problem of declining birth rate is mostly socio- cultural in nature.
3. **Ignore state efforts to reduce birth rate.** Lebenstein ignore the state action in bringing down the fertility rate. As the experience of Japan has shown, no under developed country can effort to wait for the per capita income to rise above the critical minimum level so that the birth rate may start declining automatically.
4. **Neglect time element.** The theory fails to take into account the time element which is required for sustained effort during which fundamental changes in the institutional and productive structure should be taking place for ensuring successful take off.
5. **Complex relation between Per capita income (PCI) and Growth rate.** The relation between Per capita income and Growth rate is not simple as shown by Lebenstein. The relation of PCI with rate of saving and investment depends on the distributional pattern of income and the effectiveness of financial institutions in mobilizing saving. The relation between investment and the resultant output is not determined by a constant capital - output ratio, as is assumed by Lebentsein.

6. **Application to closed Economy**. The Lebenstein theory does not explicitly explain the influence of foreign capital nd External forces on the levcel of income, saving and investment in under developed countries.

EXERCISES

Short essay

1. Distinguish balanced growth strategy and unbalanced growth strategy.

2. Bring out the measures of development.

3. State low-level equilibrium trap theory.

4. Explain big push theory.

Essay

1. Critically examine Leibenstein's critical minimum effort theory.

MODULE III

ECONOMIC PLANNING

THE CONCEPT AND DEFINITION OF ECONOMIC PLANNING

Planning is an endeavor to allocate systematically the available resources to achieve certain ends. In this sense, any individual or any firm is a planner. Planning is defined as conceiving, initiating, regulating and controlling economic activity by the state according to set priorities with a view to achieving well-defined objectives within a given time. The concept of economic planning attracted the attention of most of developing countries since its first experiment made by then Soviet Union in 1928. Since then it was adopted by number of countries in various forms. . In a general sense, the term economic planning can be defined as formulation of control and regulation of economic activity by public agency with a view to achieving well-defined objective(s). Since the key questions implicit in this definition such as formulation of economic policies, regulation and control of economic activity and goals and objectives of the national economy are closely related to the political structure of a society, the techniques and patterns of economic planning thus become intricately woven with its political system.

According to ***Professor Dickinson***, economic planning is the making of major economic decisions by a determinate authority on the basis of a comprehensive survey of the economy as a whole. Such decisions include what and how much to produce; how, when and where it is to be produced; and to whom it is to be allocated.

With reference to underdeveloped countries, ***Subrata Ghatak*** defines economic planning as a conscious effort on the part of any government to follow a definite pattern of economic development in order to promote rapid and fundamental change in the economy and society.

Lewis Lorwin defines a planned economy "as a scheme of economic organization in which individual and separate plants, enterprises and industries are treated as coordinate units of one single system for purpose of utilizing all available resources to achieve for maximum satisfaction of the people's needs within a given time"

National Planning Commission of India- "Planning under a democratic system may be defined as the technical co-ordination, by disinterested experts, of consumption, production , investment, trade and income distribution, in accordance with social objectives set by bodies representative of the nation. Such planning is not only to be considered from the point of view of economics and the raising of the standard of living but mist include cultural and spiritual and the human side of life".

The planning is done by central authority like state possessing the powers for implementation. It is to be preceded by a comprehensive survey of economic conditions which will point out the defects and deficiencies of the prevailing economic system. After this survey, definite goals are fixed. The manner and timing, quantitative aspects of achieving these goals are then outlined; finally, the benefits accruing from such action are to be shared for the maximum satisfaction of the largest number of people through deliberate decision, control and direction.

TYPES OF ECONOMIC PLANNING

There are so many types of plans as there are patterns of economic systems. Economic planning has been classified in a variety of forms based on the differences in the institutions affected, media of planning, geographical areas, extent of activities covered, mode of executing plans, time periods etc. The following are the main types of economic planning.

1. Planning by Inducements

Planning by inducement is often referred to as 'indicative planning' or 'market incentives'. In such type of planning, the market is manipulated through incentives and inducements. Accordingly, in this system there is persuasion rather than compulsion or deliberate enforcement of orders. Here the consumers are free to consume whatsoever they like, producers are free to produce whatsoever they wish. But such freedom of consumption and production are subject to certain controls and regulations. The consumers, producers and other factors of production are induced with the help of various fiscal and monetary devices. To encourage savings and investment and discourage consumption a suitable package of fiscal and monetary policies can be introduced in the market. Therefore, the desirable results can be attained with the help of incentives and without the imposition of orders and instructions. Moreover, in such planning there is less sacrifice and less loss of liberty – economic as well as non-economic.

Merits of Planning by inducements

(a) Consumers' sovereignty remain intact. Planning by inducements is more democratic as compare to planning by directions.

(b) There is a freedom of choice of profession.

(c) In planning by inducements, there is freedom of enterprise. Produces are free to produce whatever they like but within in the capacity of given rights.

(d) Planning by inducements is smooth and flexible. It is more popular because it enables to incorporate the changes in resources, technology and taste etc. even after the finalisation and implementation of plan.

(e) Under this sort of planning, the inertia attached with standardisation can be put to an end and producers are free to produce in accordance with the desire of consumers. Therefore, there is a variety of goods and services in the market.

(f) There are less administrative costs involved in planning by inducements.

(g) The problem of shortages and surpluses is solved as there is an existence of automated market system. The demand and supply is automatically adjusted and remain in balance under market economy.

Demerits of Planning by Inducements:

(a) It also fails to achieve 100% targets of economic planning.

(b) Under planning by inducements, there are profit motives more than welfare of public. Private entrepreneurs care for those products which yield high profits. Products or services with less profit or no profit do not attract private entrepreneurs. Such products or services include education, health, defence, security, etc.

(c) The producers may find the government policies regarding economic affairs not attractive enough to follow. There may be disputes among entrepreneurs and the government regarding tax rates, investment policies, interest rates, etc.

(d) The mechanism of market economy may cause the prices to inflate esp. with reference to under-developed countries or in case of oligopoly where there is a shortage of certain products like petroleum and gas.

(e) There may be disharmony between labour and producer, and there may be serious industrial disputes.

2. Planning by Directions

This type of planning is practised in socialist countries like China, Former USSR, Cuba, North Korea, etc. Under planning by direction, there is one central authority which plans, directs and orders the execution of the plan in accordance with the pre-determined targets and priorities. It determines the production figures, delivery schedules, quotas regarding the production of the goods, price controls, use of foreign exchange and allocation of resources like labour, etc. amongst different competing uses. Thus, such planning is comprehensive and encompasses the whole economy. Planning by directions is similar to military or defence plans which are carried through orders and instructions. Thus the strategy of planning through directions coincides with the military strategy. Along with the disintegration of former Soviet Union, the methodology of planning by directions has received certain serious setbacks. Now most of the UDCs are tend to adopt market economic system.

Demerits of Planning by Directions:

(a) Planning by direction is undemocratic since the people are ignored all along.

(b) It is bureaucratic and totalitarian. Under bureaucratic system, the individual's sovereignty is completely abolished. Corruption, red tapism, VIP system, tyranny and austerity are the byproducts of bureaucracy.

(c) Rationing and control result in black marketing.

(d) There are shortages of some goods and as well as surpluses of other goods. That is, there is an imbalance in production output.

(e) This sort of planning is inflexible. Once the plan is prepared, there is no room for alterations in later phases of planning. A part of the plan cannot be changed without simultaneous changes in many interconnected activities. Planning by direction is so complex that it is impossible to change even a part of it as it will involve in altering the whole plan.

(f) The fulfilment of plan cannot be guaranteed, as the planning by direction is hampered by black marketing and corruption.

(g) Planning by direction also leads to excessive standardisation which impinges on consumer sovereignty. In other words, under planning by direction the goods produced are standardised lacking the variety. As in case of USSR, the produced TV, Fridges and Automobiles were identical having no differentiation.

(h) It also involves huge administrative costs, as the planning by direction involves in elaborate census, numerous forms and army of clerks.

3. Physical and Financial Planning

Physical planning is concerned with physical allocation of resources on the one side, while with the product yields on the other side. Its aim is to bring physical balance in between investment and output. Accordingly, investment coefficients are computed. These coefficients show how much amount of investment will be required for a given amount of output. Moreover, in such planning it is also analysed that what will be the composition of investment to obtain an increase in output. As, how much iron, how much coal, oil and electricity will be required to produce some specific amount of steel. While making physical planning, an overall assessment is made regarding the real resources of the economy like raw material and manpower.

In financial planning, equilibrium is established between demand and supply to avoid inflation and bring economic stability. The difference between physical planning and financial planning is that the physical planning tells us the size of investment in terms of real resources, whereas the financial planning tells us the size of investment in terms of money. In financial planning, the planner determines how much money will have to be invested in order to achieve the pre-determined objectives. Total outlay is fixed in terms of money on the basis of growth rate to be achieved, the various targets of production, estimates of the required quantity of consumer goods and the various social services, expenditure on the necessary infra structure, etc. as well as revenue from taxations, borrowings and savings.

4. Centralised Planning and Decentralised Planning

Under centralised planning, all the economic decisions are taken by the central authority or the government. It is the government which formulates economic plans, determines objectives, sets targets and priorities. Every member has simply to carry out the instructions without questioning about its viability. There are more chances of failure as the individuals are not allowed to carry out the plans in accordance to their needs and preferences. It is the government who takes responsibility of the success or failure of the plan. It is the government who takes all the decisions of consumption, production, wages and prices. What amount of investment is to be made?, What should be the price?, What should be the output?, How the products are to be distributed?, How much amount of loans is to be granted?, What should be the rate of interest?, etc. Centralised planning is mostly executed in socialist or communist countries.

Decentralised planning is connected with the capitalistic economies. The decentralised planning is implemented through market mechanism. Decentralised planning empowers the individuals or small groups to carryout their plans for achievement of a common goal. Under decentralised planning, the operation is from bottom to top. The planning authority formulates the plan by having made consultation with different administrative units of the economy. The plans regarding different industries are designed by the representatives of these industries. In such type of planning, the planning authority issues the instructions to central and local bodies regarding incentives given over to private sectors. It involves execution of the plans from grass roots.

5. Structural and Functional Planning

The planning which is aimed at bringing changes in socioeconomic set-up of a country is termed as structural planning. This type of planning is attributed to the planning which was made in USSR in 1929 when the existing land-lord-system was abolished, collective farming was introduced, trade, industries and transport system was nationalised. While functional planning is a type of planning where hardly any big change is brought about in the existing socio-economic set-up of the country. It means when planning is made in the presence of existing institutions is termed as functional planning. In France, Germany, UK, etc planning is being made in the existing framework of capitalism.

6. Democratic and Totalitarian Planning

Under democratic planning, the philosophy of democracy is followed. Since formulation to the execution of the plan, the people are taken into confidence. Whenever the plan is prepared, the ruling party makes a dialogue with the public firms and even with opposition party. The purpose of such arrangements is to satisfy different segments of the economy regarding growth and welfare programmes. After the formulation of the plan, an open discussion is make in the parliament. Under democratic planning, whole of the economic activities are performed through price mechanism. The government influences the private sector through fiscal and monetary policies. Moreover, the government passes anti-monopoly laws to protect the consumer’s sovereignty.

In totalitarian planning, there is a central control, and all economic activities are governed by the central authority. In totalitarian planning, all of consumption, production, distribution and exchange like activities are controlled by the central planning authority. Totalitarian allows no consumer sovereignty and democratic freedom.

7. Fixed Plan and Rolling Plan

In a fixed plan, the contents of the plan are fixed in relation to a fixed time period. These contents consisting of targets, priorities, strategies and resources, etc. will not be changed during the particular time period for which the plan has been prepared except for severe unforeseen events.

Merits of Fixed Planning:

(a) There is boldness in planning. This is the essence of planning that the planners and implementing machinery will not bow down before the obstacles.

(b) There is effective implementation of plan.

(c) The targets of fixed plan are certain and this certainty in objectives brings stability to the economy.

(d) Fixed plans ensure discipline for the planning process.

Demerits of Fixed Planning:

(a) Fixed plans are inflexible plan. They cannot be altered in later phases.

(b) There is no revision of economic objectives and targets as there is no alteration allowed under fixed planning.

(c) If the state is an under-developed country, the fixed plan would give the economy a hard time to achieve the basic objectives like employment, industrialisation, education, health, etc.

(d) Fixed plans, if not properly formulated and implemented, lead to wastage of resources.

Rolling planning refers to the rolling of a plan at intervals usually one year, so that it continues to be a plan of certain number of years. It is usually the medium term plan.

Merits of Rolling Plan:

(a) Rolling plans are flexible and can be altered in later phases.

(b) The rolling plan allows for revisions and adjustments. In rolling plan, review of the plan is a continuous exercise.

(c) Rolling plans enable the planners to keep the time horizon moving, alongwith making revisions and adjustments so as to prepare a new plan every year in accordance with the changing circumstances.

Demerits of Rolling Plan:

(a) Rolling plan is furnished with uncertainty, as there is no fixation of economic objectives.

(b) In rolling plans, the planners are always reluctant in taking difficult decisions or taking courageous decisions.

(c) Under rolling plan, there is a lack of commitment. As there is no fixity attached with the plans, the enthusiasm on the part of planning and administrative machinery will hardly be found.

8. Short-term, Medium and Long-term Planning

Short-term plans are also known as 'controlling plans'. They encompasses the period of one year, therefore, they are also known as 'annual plans'. In annual plans or budgets the financial aspects of the plan, i.e., financial sources and applications are shown. In the annual developmental plans the items pertaining to capital budgets, i.e., the capital revenue and expenditure are listed. The main objectives of short-term planning is to raise the revenue, attain the short-term economic targets, bring price stability, and remove deficit in BOP.

The medium-term plans last for the period of 3 to 7 years. But normally, the medium term plan is made for the period of five years. The medium-term planning is not only related to allocation of financial resources but also physical resources. The main objectives of medium-term economic planning are to raise per capita income, raise the level of employment, create self-sufficiency in the economy, reduce dependence over foreign aid and raise revenues through domestic sources, and to remove regional and intra-regional disparities.

Long-term plans last for the period of 10 to 30 years. They are also known as 'perspective plans'. The origin of long-term planning goes back to USSR where Goelro Plan 1920-35 was first formulated and implemented in 1920. The basic purpose of that plan was to electrify the rural areas. The basic philosophy behind long-term planning is to bring structural changes in the economy. Under long-term planning, there is greater freedom of choice and there is a wide scope of planning.

9. Corrective and Developmental Planning

The planning consisting of fiscal and monetary measures with the aim of removing the imbalances of the economy is known as 'corrective planning'. As to control inflation, if the government follows a very strict fiscal and monetary package; controls aggregate demand by checking consumption, investment and government expenditure – this will be the case of corrective planning. On the other hand, the planning which is aimed at developing the whole economy is known as developmental planning. Development planning involves the application of a rational system of choices among feasible courses of investment and other development actions.

10. Capitalist and Socialist Planning

Capitalistic economy is also known as ‘free-enterprise economy’. Under capitalism, there was no authority governing the planning activity. All the economic activities were controlled by the private sector. The state function was limited to tax collection and defence. There was no public welfare measures, no developmental planning and no labour rights. But with the capacity of time esp. after the great depression of 1930s and development of economic, social and political economic thoughts, the capitalist economies adopt the modern functions like:

(a) formulating and implementing monetary, fiscal and trade policies,
(b) promulgating anti-monopoly and anti-cartel laws,
(c) working for the sake of community’s benefits,
(d) formulating and implementing development plans
(e) providing basic facilities of health, education, transportation, communication, and recreation, etc.

In socialism, the central planning board formulates the plan which covers the whole economy. The central planning board has unlimited powers regarding allocation of resources and production of goods and services. The central planning authority determines the goals and priorities regarding distribution of national income, employment, economic needs, capital accumulation and economic growth. Under socialism all factories, resources, financial institutions, shops, stores, ware houses, foreign and domestic trades, means of communication and transportation are under government control.

Planning under Mixed Economy

Most economists suggest the operation of mixed economy because both extreme capitalistic and socialistic system are not suitable. Capitalistic or free enterprise economy are characterised by lot of problems including misallocation of resources, market imperfections, monopolies, oligopolies, labour exploitation, widening gap between haves and have-nots, and consumer’s exploitation. On the other hand, socialistic form of economy may create the problems like State’s monopoly and supremacy, bureaucratic hold, corruption, red tapism, VIP-system, loss of consumer’s sovereignty, standardization of products, poor quality of products, less foreign trade, etc.

While in case of mixed economy, consumer’s sovereignty, private property ownership and operation of price mechanism are ensured. The public sector also works parallel to private sector. The public sector in a mixed economy consists of those projects which require heavy funds like railways, air transportation, roads, bridges, fly-overs, underpasses, power generation, irrigation, telecommunication, research, etc. The government also addresses people’s basic needs like employment, health, and education. In under-developed countries, the government also provides housing facilities to poor families. To avoid labour exploitation and consumer’s exploitation, the government promulgates anti-monopoly and anti-cartel laws. In mixed economies, the government even adopts safety measures against pollution and unhealthy working conditions in factories, offices, etc. In case of agricultural sector, the government provides short term loans to farmers, and imports farm machines.

TECHNIQUES OF PLANNING

Economic planning is a process which determines the path of economic progress. Among the many priorities and necessities government has to make a choice of path among alternatives and available resources for development. The choice of path for development involves planning process. Planning is a continuous process which involves decision, or choices, about alternative ways of using available resources, with the aim of achieving particular goals at some time in future. The planning is organized and directed by a central authority like the state possessing the power of implementation.

Planning involves following processes:

(a) Survey and diagnosing the current economic situation

(b) Framing of a policy, philosophy and a framework for implementation

(c) Defining a set of objectives which should be achieved and fixing some strategies therein

(d) A macro-economic projection of different variables of the whole economy.

Different countries use planning techniques depending upon the nature of the economy, the availability of the information, the capacity to use and manage such techniques. Some of the major techniques used include cost-benefit analysis, Input-output analysis, linear programming etc.

PROJECT FORMULATION AND EVALUATION

Project appraisal and evaluation are often referred to together as project assessment. Project appraisal is concerned with assessing, in advance, whether a project is worthwhile and therefore if it should be proceeded with. It is the most specialized planning process, which involves systematic, objective and compressive appraisal of development programs for individual commodities and projects. It implies an appraisal and assessment of a project as to its operational efficiency technically, economically, financially and managerially. It involves a probe by a group of outside experts into the working of a project, to find out its achievements and weakness and to suggest ways and means of overcoming the weakness to improve its operation.

The process of project evaluation is concerned with assessing, in a retrospective sense, the performance of a project after it has been implemented and completed. Such a process of policy assessment occupies a central place in public policy and management. Many of the issues of public policy and management are about resource allocation, the trade-offs between different policy measures and the impacts of those policy measures on the economy and on society. Management in the public sector is subject to budgetary constraints and often to political pressures; project appraisal techniques may help in the decision process and obtain a more efficient allocation of resources.

Project evaluation involves:

1- Estimating the cash flows associated with the investment project.

2- Determining the (discount rate, opportunity cost of capital, or the required rate of return) on the project according to its risk level.

3- Evaluating the stream of the cash flows associated with the project.

Project appraisal is widely used both in the developed as well as in under-developed countries both independently as well as an integrated scheme of national planning. The government formulate and evaluate investment projects in such a way as to be able to compare and evaluate alternative projects in terms of their contribution to the objectives of the nation. The team preparing project report consists of engineers and economists specialised in investment analysis and the relevant fields. The sociologists and natural environmentalists must also be included.

COST-BENEFIT ANALYSIS

Cost-benefit analysis (CBA) in its broadest sense is the process of ranking policy options from an economic point of view, taking account of both the benefits of the policy and its costs. It is the most scientific and useful criterion for project evaluation. CBA is the process of quantifying costs and benefits of a decision, program, or project (over a certain period), and those of its alternatives (within the same period), in order to have a single scale of comparison for unbiased evaluation.

Cost–benefit analysis, in governmental planning and budgeting, is an attempt to measure the social benefits of a proposed project in monetary terms and compare them with its costs. The procedure, which is equivalent to the business practice of cost-budgeting analysis, was first proposed in 1844 by the French engineer A.-J.-E.-J. Dupuit. Since the 1960s, cost–benefit analyses have been used in all aspects of government planning and budgeting, from programs that can be analyzed with a fairly high degree of accuracy, such as waterworks, to programs that involve a great degree of subjective data, such as military outlays.

Benefit-cost analysis has several objectives. First, BCA can be used to evaluate the economic merit of a project. Second the results from a series of benefit-cost analyses can be used to compare competing projects. BCA can be used to assess business decisions, to examine the worth of public investments, or to assess the wisdom of using natural resources or altering environmental conditions. Ultimately, BCA aims to examine potential actions with the objective of increasing social welfare.

The CBA helps the planning authority in making correct investment decisions to achieve optimum resource allocation by maximizing the difference between the Present Value of Benefits ($\mathbf{PV_B}$) and PV of Cost ($\mathbf{PV_C}$). A cost–benefit ratio (**B/C**) is determined by dividing the projected benefits of a program by the projected costs. In general, a program having a high benefit–cost ratio will take priority over others with lower ratios.

Decision Rules or Criteria for CBA

CBA can take account of the economics of time – known as **discounting**. This is important when looking at environmental impacts of a project in the years ahead. For this purpose there are a number of decision rules or criteria. A decision rule tells us whether an investment is worthwhile and whether one investment is better than another is.

1. Net present value NPV

NPV is the present value of all benefits, discounted at the appropriate discount rate, minus the present value of all costs discounted at the same rate. Or

NPV = PV of future cash flows – Investment

Procedure:

NPV is the present value of all cash flows generated by a project.

1) Find the PV of each cash flow (both inflows and outflows)

2) Add up all the PV's to get NPV.

3) Accept the project if NPV > 0. If two projects are mutually exclusive, pick the one with the higher positive NPV. Symbolically,

$$NPV = \left[\frac{B_1}{(1+i)} + \frac{B_2}{(1+i)^2} + \cdots + \frac{B_n}{(1+i)^n}\right] - \left[\frac{C_1}{(1+i)} + \frac{C_2}{(1+i)^2} + \cdots + \frac{C_n}{(1+i)^n}\right]$$

Where $B_1, B_2,$ ………. B_n are series of gross present benefits in years 1,2, ……. n

$C_1, C_2,$ ………. C_n are series of gross present costs in years 1,2, ……. N

i is the social rate of discount for annual compounding.

2. Internal Rate of Return IRR

IRR (r) is defined as the discount rate at which NPV is zero. Symbolically,

$$\frac{B_1 - C_1}{(1+r)} + \frac{B_2 - C_2}{(1+r)^2} + \cdots + \frac{B_n - C_n}{(1+r)^n} = 0$$

• When the cost of capital (k) equals the IRR, NPV=0

• When k > IRR, NPV < 0 →Reject

• When k < IRR, NPV > 0 →accept

By far, the best way to compute IRR is using a financial calculator.

IRR_S = 14.5%

IRR_L = 11.8%

Since k = 10.0% we would accept both projects if S and L are independent.

If S and L are mutually exclusive, the IRR method would tell us to accept project S, since 14.5% >11.8%.

The IRR is a project's expected rate of return. If it exceeds the cost of capital, then shareholder wealth is increased by the project.

IRR Decision Rule:

If IRR ≥ discount rate then accept.

For Mutually exclusive investments, select the project with the largest IRR

NPV is superior to IRR when choosing among mutually exclusive investments.

Unlike the present value (PV) method of investment appraisal, CBA estimates the net present value (NPV) of the decision by discounting the investment and returns. Though employed mainly in financial analysis, a CBA is not limited to monetary considerations only. It often includes those environmental and social costs and benefits that can be reasonably quantified.

While BCA can be useful, there are some difficulties with its application. First, it requires that the analyst assign monetary values to all benefits and costs. As we know, however, there are numerous benefits and costs which are intangible and therefore difficult to value. For projects with an environmental impact, for example, it can be difficult to place a dollar value on the benefits and costs. While the value of timber may be easy to calculate, the value of a spotted owl may not.

Another drawback with BCA is the fact that results can be very sensitive to the choice of the discount rate. The entire result from a complex BCA may hinge on the choice of a single number for the discount rate. For this reason, BCA can be very controversial. The rate that is chosen can radically change the outcome of analysis.

Finally, an important drawback with BCA is that while most benefits and costs that arise in the present are known, many that arise in the future are unknown. A BCA must be conducted using information that is available. This information will be limited by our current knowledge of benefits and costs. Some future benefits and costs cannot conceived, much less measured. However, the role of uncertainty plagues not only BCA but also most other decision-making methods.

MARKET VERSUS PLANNING

An economy may be defined as the state of a country or region in terms of the production and consumption of goods and services, and the supply of money. A market economy (also called a free market economy, free enterprise economy) is an economic system in which the production and distribution of goods and services takes place through the mechanism of free markets guided by a free price system .

On the other hand, a command economy (also known as planned economy) is an economic system in which the state or government controls the factors of production and makes all decisions about their use and about the distribution of income . There is another type of economy, known as Mixed economy. Mixed Economy is combination of free market and command economy. However, this essay will analyze the main key difference between command and free market.

A planned economy or directed economy is an economic system in which the government or workers' councils manages the economy. Its most extensive form is referred to as a command economy, centrally planned economy, or command and control economy. In such economies, the state or government controls all major sectors of the economy and formulates all decisions about their use and about the distribution of income, much like a communist state. The planners decide what should be produced and direct enterprises to produce those goods. Planned economies are in contrast to unplanned economies, such as a market economy, where production, distribution, pricing, and investment decisions are made by the private owners of the factors of production based upon their own and their customers' interests rather than upon furthering some overarching macroeconomic plan. Less extensive forms of planned economies include those that use indicative planning, in which the state employs "influence, subsidies, grants, and taxes, but does not compel." This latter is sometimes referred to as a "planned market economy."

A command system is one in which decision making is centralized. In a command economy, the government controls the factors of production and makes all decisions about their use and about the consumption of output. The central planning unit takes the inputs of the economy and directs them into outputs in a socially desirable manner. This requires a careful balancing between output goals and available resources. Resources is allocated through a planning process. At its most extreme, this means that the state will direct labor into jobs as well as directing consumers what to consume, although it is more likely that they will direct producers what to produce, thus determining the choice of goods available to consumers. What is more, price is controlled by government, they decide minimum and maximum price of goods according to their importance. For instance, one the one hand, government sets the minimum price for wheat to encourage farmers to produce more. On the other hand, government sets the maximum price on rents so everyone can easily afford that. In a command economy, the state plans the allocation of resources between current consumption and investment for future, the output of each industry and firm, methods of production and the resources allocated to each industry and firm. Moreover, in a command economy, all factors of production apart from labor are owned by the state. The classic examples of command economies were the USSR under Stalin and the People's Republic of China during Mao's Great Leap Forward.

In contrast, in a free market economy, all economic decisions are taken by individuals and firms, which are assumed to act in their own self-interest. Firms decide what goods shall we produce? They can produce whatever they want to acquire their maximum profit. They can produce necessity goods such as foods, clothes, tables and chairs. Moreover, they decide the prices of goods as guided by the laws of demand and supply. The interaction of buyers and sellers, motivated by self-interest and regulated by competition, all happens without a central plan. This phenomenon is called “the invisible hand of the marketplace.” For instance, one firm produces Flat TVs, if Flat TVs are highly demanded, Prices increase dramatically. However, demand of black and white TVs decrease, consequently prices decrease. In addition, in a free market economy, the output is determined by the quantity demand, the techniques of production by the firms themselves keeping in mind efficiency and productivity and land is free to buy for everyone (firms, business invertors and etc). The free market idea of land ownership can have some good and some disastrous effects. On the one hand, land ownership is good because this gives the opportunity to business person to plan for long term without having any problems such as, rent or charges on the land will increase after few years. On the other hand, land prices will increase dramatically which will affect the whole country. For instance, residential land values in Japan grew seven times faster than wages between 1950 and 1988 . This wrecked Japan's economy and it has taken 16 years to recover. The common examples of free market are USA, China and Canada.

To sum up, world has scarce resources. The economic systems of countries are designed to allocate those resources, through a production system, to provide output for their citizens. The fundamental questions that these systems answer are: what to produce, how and for whom? Market economies leave the answers to these questions to the determination of the forces of supply and demand while command economies use a central planning agency to direct the activities of the economy. Both have their own strengths and weaknesses. But in really world, all economies are actually mixed economies, incorporating some facts of both market and command economies. The relative importance of the particular economic system in the country is the determinant of the type of economic system that it is generally considered to be.

RELEVANCE OF PLANNING IN THE CONTEXT OF GLOBALIZATION

Economic planning in India started from 1951. Planning in a mixed economy is very difficult task. It has to carry the stress and strains of both private capitalism as well as socialist priorities of a welfare state. Economic planning cannot be merely indicative like a market economy nor can it be imperative type like a socialist economy.

In the absence of state control over means of production planning also has to see that concentration of economic power does not take place. State has to make a judicious blend of direct and indirect controls. It can neither be rigid nor too flexible. Planning in India has to operate through these two lines of action. Planning is implemented by planning commission. The major objective of economic planning in India is achieving an increase in GDP, GNP. Government’s role as a planner made a tremendous headway in terms of economic growth.

The role of planning in managing modern market economy is quite different from what it was three decades ago when the public sector was seen as having an expanding role and government sector pervasive whereas under the present circumstances, the country expects and encourages much freer operation of market forces and the Government is withdrawing from large part of the economy. It is believed that free markets are conducive to economic efficiency and, therefore, higher economic growth. But there is a misconception that the Government has no role to play in the change economic scenario. It is true that the role of the Government is radically different from what it was in the past.

After 1991 the government of India changed the course of planning in consonance with renewed global interest on market economy. Private sector got a higher importance in the planning process. Public sector has got a limited role to play in the revised phase. But the nature of mixed economy and the planning process has still an active role. The planning though is now more indicative in nature thus the mixed economy structure has remained unaltered even in revised phase of the economy.

Private sector account for around 73 percent of total national output. In industrial sector private sector contributes about 70 percent of total value added generation. This growth and performance of private sector has been possible for a democratic role of the government in its planning process which is a natural and true feature of mixed economy.

The following points give us a clear idea about the role of planning in the context of liberalization, privatization and globalization of the Indian Economy.

1. The Government must withdraw from areas, which are best-managed by the private sector but it must strengthen its position in certain areas where the private sector cannot be expected to play a role.

2. A whole range of social sector, especially health and education, are clearly areas where the Government must play a much larger role than it has in the past, if it has to meet the huge gaps that the country faces at present.

3. In addition, the entire area of rural economic infrastructure is one that cannot be left entirely or mainly to the private sector. Programmes of soil and moisture conversation, rural land development, provision of safe drinking water and sanitation are areas where the state will have a role in the foreseeable future.

4. In the area of economic infrastructure for the rest of the economy, what is needed is a partnership. In the past, economic infrastructure such as railways, ports, national roads and power were all provided by the Public Sector. Now, these services have been opened up to the private sector to the extent that the private sector can be expected to come in and this varies from sector to sector.

5. However, in the foreseeable future, in the development of the national road network, the bulk of road development will have to be in the public sector, although a start in this area has already been made.

6. For all the above reasons, public investment both at the Centre and in the States will continue to have a major role in the development of the country and the prioritisation of this investment will form part of the planning process.

7. Again, in the present context of federal polity, some subjects are allotted to the central government, others are left to be managed by the Sates, and in some both the Centre and State governments have a concurrent jurisdiction added to that some issues are to be tackled by the elected Panchayati raj institutions at the village level and by the urban bodies.

The most vital function of planning in such a federal system is to evolve a shared vision of or a shared commitment to the national objectives in the government at all levels, but also among all other economic agents.

8. No development strategy can be successful unless each component of the economy works towards a common purpose with the full realisation of the role that it has to play within an overall structure of responsibilities.

9. Planning Commission is best equipped to evolve a long-term economic strategy for the development of the country.

10. In spite of the liberalisation of the economy, there are some functions which can be performed by the Planning Commission alone. For instance, it is required to address the national objectives of poverty alleviation, population control, employment generation and balanced regional development in a holistic manner. Leaving these issues to the sectoral ministries runs the danger of the inter linkages and synergies being overlooked.

11. Another area where Planning Commission is relevant is in co-coordinating the economic activities of the central and state governments and among the central ministries.

12. Coherent policy-making requires that some agency ensures that the different and autonomous tiers do not work at cross-purposes.

13. In addition, the creation of a partnership in the public and private sector in other infrastructure sectors requires a supportive regulatory framework. Here, policy planning rather than the old fashioned material planning plays a crucial role.

From the above, it is clear that in not only developing countries like India, but of the developed countries as well, planning forms a vital component in deciding the future of the country. Planning will also involve a greater realisation of the interdependence that already exists between different countries of the world, and short-term profit motives will have to give way to building long-term relationships on the basis of mutual benefit. To improve the effectiveness of the various programmes, which help the poorest of the poor, the institution of plan administration must be re-oriented to capture and internalise the aspirations of the common man and suitably modify them keeping in view the resources availability and the state of technology.

A. Multiple Choice Questions

1) Planning technique is used firstly in ……………. country for economic development.

a) **Russia** b) England

c) America d) India

2) In----------- planning, the market is manipulated through incentives and inducements.

a) Physical planning b) **Indicative planning**

c) Financial planning d) Emergency planning

3) The long-term plans are known as

a) Annual plans b) Flexible plans

c) Comprehensive plans d) **Perspective plans**

4) CBA as a technique of project evaluation was first proposed in 1844 by

a) Arthur Lewis b) M. N. Roy

c) **Dupuit** d) A. K. Sen

5) --------------is combination of free market and command economy.

a) **Mixed Economy** b) Centralized economy

c) planned economy d) open economy

6) The planning which is aimed at bringing changes in socioeconomic set-up of a country is

a) Functional b) Comprehensive

c) National d) **Structural planning**.

7) In India the planning started during the year——————-

a) **1951** b) 1947

c) 1991 d) 1961

8) The Planning Commission was set up by Indian Congress under the Chairmanship of...............

a) Sir. Vishveshvaryya b) **Pandit Jawaharlal Nehru**

c) M. Gandhi d) Tata Birla

9) Indian Planning Commission drafted First Five Year Plan in ....

a) March 1950 b) **July 1951**

c) June 1955 d) January 1944

10) The Planning Commission was established in ....

a) 17 July 1949 b) **15 March 1950**

c) 15 June 1934 d)15 August 1945

11) The ....is the Chairman of the Planning Commission.

a) President b) **Prime Minister**

c) Chief-Minister d) State Governor

12) __________ has first used the method of project evaluation for development plans in India.

a) Prof Mahalnobis b) Prof Raj

c) **D. R. Gadgil** d) Dr. Ram Narayan.

13) Economic Planning is in

a) Union list b) state list

d) **Concurrent list** d) None of these

14) The author of "Indian Economic Planning in its broader setting"

a) Bimal Jalal b) **Gunnar Mydral**

c) Jawaharlal Nehru d) L. K. Jha

15) 'Planning from Below' is

a) **Decentralized** b) Centralized

c) Totalitarian d) Structural

B. Write short Notes on following

1) What is Planning?

2) Define Economic planning?

3) What is Project Evaluation?

4) Define NPV?

5) Explain planning by inducement?

6) What are Perspective plans?

7) Comment on market mechanism.

C. Short Essay Question

1) Distinguish between Centralised Planning and Decentralised Planning

2) Explain Short-term, Medium and Long-term Planning

3) Distinguish between NPV and IRR

4) Stages in the Project Evaluation.

5) Describe Market Vs Planning.

D. Essay Question

1) Describe the types of planning and its limitations

2) Explain project evaluation with emphasis on CBA.

3) Discuss the role of economic planning in globalized economy

MODULE IV

ECONOMIC PLANNING IN INDIA

Introduction

Economic Planning has become part and parcel of economic development since the dawn of the 20th Century. All countries of the world have adopted some kind of planning to achieve their development objectives. Several factors have been responsible for the institutionalization of planning across countries. Hence, an understanding of the evolution, meaning and definition of planning in general and the various dimensions of planning in India is interesting as well as meaningful. This module is an attempt to familiarize you with the technical as well as functional aspects of economic planning. After studying this module you will be able to define planning, elucidate the planning attempt before independence and also the performance of eleven five year plans of our country.

The 20th century was an era of planning. Almost every country had some sort of planning. In socialist countries, planning is almost a religion. Even in countries like the U.S.A. and the U.K, with a capitalistic system, they have partial planning. The 19th century State was a Laissez faire state. It followed a policy of non – intervention in economic affairs. As you know, the apostle of Laissez faire, Adam Smith set apart only three main activities of an economy to the Government. They were: maintenance of law order, construction of social and economic overheads and protecting the country from internal and external aggregation. But the modern State is a welfare State. The two World Wars, the Great Depression of 1930s and the success of planning in the erstwhile Soviet Union have underlined the need for planning. Planning is really a gift of former Soviet Russia to the world, for; it was the first country to practice economic planning on a national scale.

Justification for Planning

Many economists today agree that planning is an organized, conscious and continuous attempt to select the basic available alternatives to achieve specific goals. Planning involves the economizing of scarce resources. Most of the underdeveloped countries of the world became independent only fifty or sixty years back and most of them were poor at that time. So it became the main business of the Governments of the newly emergent nations to provide food, clothing and shelter to their people. For that, first of all, they had to increase their national income. Since most of them were agricultural countries, they had to evolve some programmes for agricultural development. Not only that, they had to industrialize their economies, they had to provide more jobs to their people. That means, they had to do something for expanding employment opportunities. Further, as most of them were wedded to some kind of socialism, they had to reduce inequalities of income and wealth. To realize these goals at early time, the poor countries embrace the way of economic planning.

Another main reason for the emergence of planning in underdeveloped countries is the failure of the market mechanism. Market failures refer to the set of conditions under which a market economy fails to allocate resources efficiently. The self promoting actions of the participants in an economy do not lead to an efficient outcome. The capitalist economy is basically a market economy and price mechanism works through the market system. The price system is a basic institution of capitalism. The allocation of resources and distribution of rewards are done through the price system. All decisions of the businessmen, farmers, industrialists and so on are guided by the profit motive. If the market is perfect, price system is good. But if there is monopoly and other types of imperfect competition, the market system fails and necessitates government intervention by way of planning.

Due to recent developments in the socialist countries, rationale of planning and state intervention came under increasing question. The focus of discussion shifted from market failure to Government failure or distortions caused by state intervention. The causal factor for the failure is not state intervention *per se* but the incentive system entrenched in a planned economy. Despite this recent dilemma in the question of *state versus market*, many a countries still believe in the efficacy of economic planning.

DEFINE ECONOMIC PLANNING?

Planning involves ex ante co-ordination and conscious direction of economic activity with a view to achieve certain social objectives. The attainment of certain social objectives provides an extensive justification for planning. Mixed economy framework was adopted in the Indian case to achieve these objectives. In this context it is interesting to go through some of the attempts to define the term planning.

One can see several definitions of economic planning. Here we recapitulate some of those definitions for the utility of the learners. According to Lionel Robbins, “strictly speaking, all economic life involves planning…. To plan is to act with a purpose, to choose and choice is the essence of economic activity”. In the words of Barbara Wooten, “Planning may be defined as the conscious and deliberate choice of economic priorities by some public authorities”. **Herman Levy** defines it as “Economic planning means securing a better balance between demand and supply by conscious and thoughtful control either of production or distribution”.

Dr. Dalton says, “Economic planning in the widest sense is the deliberate direction by persons in charge of large resources of economic activity towards chosen end”

Lewis Lorwin defines a planned economy "as a scheme of economic organization in which individual and separate plants, enterprises and industries are treated as coordinate units of one single system for purpose of utilizing all available resources to achieve for maximum satisfaction of the people's needs within a given time"

National Planning Commission of India- "Planning under a democratic system may be defined as the technical co-ordination, by disinterested experts, of consumption, production , investment, trade and income distribution, in accordance with social objectives set by bodies representative of the nation. Such planning is not only to be considered from the point of view of economics and the raising of the standard of living but mist include cultural and spiritual and the human side of life".

According to H.D. Dickinson "Economic Planning is the making of major economic decisions what and how much is to be produced, how, when and where it is to be produced, and to whom it is to be allocated by the comprehensive survey of the economic system as whole".

From the above definitions, one can see the major features of economic planning as:

1. Pre-determined and well defied objectives or goals.
2. For economic planning deliberate control and direction of the economy by a central authority, e.g., the state.
3. Optimum utilization of natural resources and capital which may be scarce and labour that may be abundant.
4. The objectives are to be achieved within a given interval of time – 5 years, 7, years, etc.
5. The performance of the economic functions of increasing production, maximizing employment and controlling population growth so that production outstrips population growth.

Planning in India

The necessity of economic planning in India was realized not only in the post-independence era but a number of efforts were made in this direction even during the pre-independence period. The first effort at introducing economic planning in India was made in 1934 by Dr. M. Visvesvarayya who at that time published his book *Planned Economy for India.* He formulated a 10 year development plan. However, it remained merely of academic interest and did not directly influence any social action. An effort to evolve a national plan was made in February 1938 when Subhas Chandra Bose in his Presidential Address to the Indian National Congress at Haripura emphasized that, 'the very first thing which our future national government will have to do would be to set up a Commission for drawing up a comprehensive plan for reconstruction. The plan will have two parts-an immediate programme and a long period programme'. But nothing has done effectively.

In Addition to these, several other plans were drawn up before independence. They are briefly discussed here under:

A. Bombay Plan :

It was published in January, 1944 and came to be known as **Bombay Plan.** It is prepared by eight leading industrialist of Bombay. The cost of the plan was Rs. 10,000 crores. The period of the plan was of 15 years. It aimed at doubling per capita income and trebling the national income in that period. It proposed to increase agriculture output by 130%, industrial output 500% and services 200% of the 1944 figures during 15 years.

B. People's Plan :

It was drafted by M. N. Roy. It was the Tata Birla Plan provoked the Indian Federation of Labour to put forth an alternative plan which was christened as the **People's Plan.** It was a Rs. 15,000 crores plan; spread a period of ten years. It laid special emphasis on agriculture development through nationalisation of land.

C. Gandhian Plan :

A plan on Gandhian principles was put forward by Principal S.N. Agrawal of Wardha Commercial College. It was a very modest plan with an estimate cost of Rs. 3,500 crores. It was aimed at developing a decentralized, self-sufficient agricultural society with emphasis on the development of cottage industries. However, it was essentially an idealist plan which neglected the development of basic and heavy industries.

D. Post -War Reconstruction Plan :

The British Government of India set up a Planning Development Council under the chairmanship of Sir Ardeshir Dalal in 1944. This development was able to formulate several schemes, short-term as well as long term, to be enforced after the Second World War. In 1946 the Interim Government set up an Advisory Planning Board to review the whole problem of planning and to make recommendations to the government as regards the action to be taken thereon in India.

E. Colombo Plan for India :

In March 1950, the Government of India appointed a Planning Commission with the Prime Minister as its Chairman. The Colombo Plan was a six-year plan. It aimed at improving the living standards of the people of South and South-East Asia by stepping up the production of food grains, industrial raw materials and finished goods. As regards India, the plan proposed to spend Rs. 1,839 crores on plan Development projects during the 1951-56 period.

F. Planning Commission & the Plans:

Soon after Independence, the All-India Congress Committee appointed the Economic Programme Committee under the Chairmanship of Pt. Jawaharlal Nehru in November 1947. The Committee submitted its Report in January 1948 and recommended the institution of a permanent Planning Commission which was set up by the Government of India in March 1950 with a view to prepare a blueprint of development taking into consideration the needs and resources of the country. The draft of the first five-year plan was published in July 1951 and it was approved in December 1951. Since 1951, India has completed Eleven Five Year Plans and the current twelfth Five Year plan (2012-2017) is in progress which will be completed by 2017.

The period of various Five Year Plans in India is given in the table

Table 4.1: Five Year Plans in India (Period-wise)

Five Year Plan	**Period**
I plan	1951-56
II Plan	1956-61
III Plan	1961-66
Rolling plan (Annual Plans)	1966-69
IV Plan	1969-74
V Plan	1974-79
Rolling plan (Annual Plan)	1979-80

VI Plan	1980-85
VII Plan	1985-90
Rolling (Annual Plans)	1990-92
VIII Plan	1992-97
IX Plan	1997-2002
X Plan	2002-07
XI Plan	2007-12
XII Plan	2012-17

Broad Objectives of Five Year Plans in India

The Indian economy has now the experience of more than six decades of economic planning. Broadly, the objectives of the five year plans can be summarized as increasing the national and per capital income, raising the investment-income ratio, reducing inequalities in the distribution of wealth and income, and providing additional employment opportunities, maintaining price stability, removal of poverty and attainment of self-reliance. However, each of the Plans also laid special emphasis on particular objectives.

The principal aim of the First Plan was to rehabilitate the Indian economy devastated by the effects of he Second World War and the partition of the country. The Second Plan laid stress on rapid industrialization with particular emphasis on the development of basic and heavy industries. The Third Plan gave top priority to agriculture with a view to achieve self-sufficiency in food grains and increase agricultural production to meet the requirements of industry and exports. The fourth Plan laid stress on growth with stability. In between the Third and the Fourth Plan, there was a Plan holiday and between 1966 and 1969 three Annual Plans were formulated because the situation created by the Indo-Pakistan conflict, two successive years of drought, devaluation of the currency, general rise in prices and erosion of resources available for plan purposes had delayed the finalization of the Fourth Plan. The two strategic objectives of the Fifth and Sixth Plan were removal of Poverty and attainment of economic self reliance. In the 7th plan, modernisation was stressed. The government which assumed in 1991 virtually abandoned these long term objectives of economic planning. Its entire concern was to implement a programme of Macro economics and stablisation through Fiscal correction. Moreover, trade, industrial and public sector policies aimed at undermining the very system of economic planning. For the first eight Plans the emphasis was on a growing public sector with massive investments in basic and heavy industries, but since the launch of the Ninth Plan in 1997, the emphasis on the public sector has become less pronounced and the current thinking on planning in the country, in general, is that it should increasingly be of an indicative nature. The 9th plan focused on accelerated growth, recognizing a special role for agriculture, for its stronger poverty reducing and employment generating facts which will be carried out over a period of 15 years.

Role of Planning Commission and NDC in the Planning Process

Two important agencies in the process of planning in India is the Planning Commission and the National Development Council. It is meaningful to understand the functions and constitutions of these two bodies.

a) Planning Commission

Rudimentary economic planning, deriving the sovereign authority of the state, first began in India in 1930s under the British Raj, and the colonial government of India formally established a planning board that functioned from 1944 to 1946. Private industrialists and economist formulated at least three development plans in 1944.

After India gained independence, a formal model of planning was adopted, and the planning commission, reporting directly to the Prime Minister of India was established. Accordingly, the Planning Commission was set up on 15 March 1950, with Prime Minister Jawaharlal Nehru as the chairman. Planning Commission though is a non statutory as well extra constitutional body, i.e. has been brought by an executive order. Jawahar Lal Nehru was the chairman of the first Planning Commission of India.

The composition of the Commission has undergone a lot of change since its inception. With the Prime Minister as the ex-officio Chairman, the committee has a nominated Deputy Chairman, who is given the rank of a full Cabinet Minister. Mr. Montek Singh Ahluwalia is presently the Deputy Chairman of the Commission. Cabinet Ministers with certain important portfolios act as part-time members of the Commission, while the full-time members are experts of various fields like Economics, Industry, Science and General Administration. The majority of experts in the Commission are Economists, making the Commission the biggest employer of the Indian Economic Services.

Functions

The Planning Commission's functions as outlined by the Government's 1950 resolution are following:

1. To make an assessment of the material, capital and human resources of the country, including technical personnel, and investigate the possibilities of augmenting those resources which are found to be deficient in relation to the nation's requirement.
2. To formulate a plan for the most effective and balanced utilisation of country's resources.
3. To define the stages, on the basis of priority, in which the plan should be carried out and propose the allocation of resources for the due completion of each stage.
4. To indicate the factors that tend to retard economic development.
5. To determine the conditions which need to be established for the successful execution of the plan within the incumbent socio-political situation of the country.
6. To determine the nature of the machinery required for securing the successful implementation of each stage of the plan in all its aspects.
7. To appraise from time to time the progress achieved in the execution of each stage of the plan and also recommend the adjustments of policy and measures which are deemed important vis-a-vis a successful implementation of the plan.
8. To make necessary recommendations from time to time regarding those things which are deemed necessary for facilitating the execution of these functions. Such recommendations can be related to the prevailing economic conditions, current policies, measures or

development programmes. They can even be given out in response to some specific problems referred to the commission by the central or the state governments.

From a highly centralised planning system, the Indian economy is gradually moving towards indicative planning where the Planning Commission concerns itself with the building of a long-term strategic vision of the future and decide on priorities of nation. It works out sectoral targets and provides promotional stimulus to the economy to grow in the desired direction. It also plays an integrative role in the development of a holistic approach to the policy formulation in critical areas of human and economic development. In the social sector, schemes that require coordination and synthesis like rural health, drinking water, rural energy needs, literacy and environment protection have yet to be subjected to coordinated policy formulation. It has led to multiplicity of agencies. The commission has now been trying to formulate and integrated approach to deal with this issue.

b) The National Development Council

The Government of India set up a National Development Council on 6th August, 1952. The N.D.C. consists of the Prime Minister, all Union Cabinet Ministers, Chief Ministers of all States and Union Territories and the Members of the Planning Commission. The Lt. Governor and the Chief Executive Councilor of the remaining Union Territories and the respective Chief Ministers represent the Delhi Administration. It is also provided that other Union and States Ministers may be invited to participate in the deliberations of the N.D.C. The Secretary of the Planning Commission is Secretary of the Council also.

Its functions are:

(1) To review the working of the National Plan from time to time,

(2) To consider important questions of social and economic policy affecting national development, and

(3) To recommend measures for the achievement of the aims and the targets set out in the National Plan, including measures to secure the active participation and co-operation of the people, improve the efficiency of the administrative services, ensure the fullest development of the less advanced regions and sections of the community and, through sacrifice borne equally by all citizens, build up the resources for national development.

Thus, it is now the N.D.C., which prescribes the guidelines for the formulation of the National Plan. In this new set-up the function of the Planning Commission is to prepare the Plan according to these guidelines. In this way, the National Development Council has emerged as the top- most policy-laying agency in the Government. Thus success of this new planning organization could depend mainly upon the tact and sagacity of the Prime Minister and Chief Minister.

An overview of India's Five Year Plans:

Having gone through the various aspects of Five year plans, let us review the features of various Plan implemented so far.

First Five Year Plan (1951-56)

The 1st five year plan was presented by Jawaharlal Nehru, who was the then Prime Minister. The primary aim of the 1st five year plan was to improve living standards of the people of India. This could be done by making judicious use of India's natural resources. The total outlay of the plan was Rs.2,069 crore. This amount was assigned to different sectors viz., Industrial sector, Energy, Irrigation, Transport, Communications, Land rehabilitation, Social services, Development of agriculture and community, Miscellaneous issues The target set for the growth in the gross domestic product was 2.1 per cent every year. In reality, the actual achieved with regard to gross domestic product was 3.6 percent per annum. This is a clear indication of the success of the 1st five year plan. The First Plan was basically an Agricultural Plan as this sector had got the largest outlay. The following Irrigation projects were started during that period: Mettur Dam, Hirakud Dam and Bhakra Dam.

2nd Five year plan(1956-61)

Industries got more importance in the 2nd five year plan. The focus was mainly on heavy industries. The Indian government boosted manufacturing of industrial goods in the country. This was done primarily to develop the public sector. The 2nd year five year plan, functioned on the basis of Mahalanobis model. The Mahalanobis model was propounded by the famous Prasanta Chandra Mahalanobis in the year 1953. His model addresses different issues pertaining to economic development. As many as five steel plants including the ones in Durgapur, Jamshedpur as well as Bhilai were set up during the plan. During the term of the 2nd five year plan, Atomic Energy Commission came into being. The Commission was established in the year 1957. During the same period, Tata Institute of Fundamental Research was born. The institute conducted several programs to search for talented individuals. These individuals would eventually be absorbed into programs related to nuclear power.

3rd five year plan (1961-66)

The 3rd five year plan laid considerable stress on the agricultural sector. In addition to the above the Planning Commission aimed at I ncreasing the national income by 5 percent per annum, m aking India self sufficient by increasing agricultural production, minimizing rate of unemployment and ensuring that people enjoy equal rights in the country. However, with the short lived Sino Indian War of 1962 India diverted its attention to the safety of the country. Due to the Sino Indian War, India witnessed increase in price of products. The resulting inflation was cost push in nature. As a result of these developments, most of the targets set for the project could not be realized.

Three Annual Plans (1966 – 69)

The fourth Plan could not be started immediately on completion of the Third Plan due to the War and other problems. So there were only annual plans for three years from 1966 to `1969. It was considered as plan holiday. The prevailing crisis in agriculture and serious food shortage necessitated the emphasis on agriculture during the Annual Plans. During these plans a whole new agricultural strategy involving wide – spread distribution of High – Yielding Varieties (HYVs) of seeds, the extensive use of fertilizers, exploitation of irrigation potential and soil conservation was put into action to tide – over the crisis in agricultural production. During the Annual Plans, the economy basically absorbed the shocks given during the Third Plan, making way for a planned growth.

4th five year plan (1969-74)

The 4th five year plan of India also served as a stepping stone for the economic growth. India had to reform and restructure its expenditure agenda, following the attack on India in the year 1962 and for the second time in the year 1965. India had hardly recuperated when it was struck by drought. India also had a stint of recession. Due to recession, famine and drought, India did not pay much heed to long term goals. Instead, it responded to the need of the hour. It started taking measures to overcome the crisis. Food grains production increased to bring about self sufficiency in production. With this attempt, gradually a gap was created between the people of the rural areas and those of the urban areas. The need for foreign reserves was felt. This facilitated growth in exports. Import substitution drew considerable attention. All these activities widened the industrial platform

5th five year plan (1974-79)

The objective of the 5th Five Year Plan was to increase the level of employment, reduce poverty and to attain self sufficiency in agriculture. The plan was in the backdrop of a deteriorating international scenario. The world economy was in a troublesome state when the fifth five year plan was chalked out. This had a negative impact on the Indian economy. Prices in the energy and food sector skyrocketed and as a consequence inflation became inevitable. Therefore, the priority in the fifth five year plan was given to the food and energy sectors. Other important cardinal objectives of the Plan were: Reducing the discrepancy between the economic development at the regional, national, international level; improving the agricultural condition by implementing land reform measures; improving the scope of self-employment through a well integrated program; reducing the rate of unemployment both in the urban and the rural sectors; encouraging growth of the small scale industries; enhancing the import substitution in the spheres including chemicals, paper, mineral and equipment industries; stressed on the importance of a labour intensive production technology in India.

6th five year plan (1980-85)

The sixth plan also marked the beginning of economic liberalization. Price controls were eliminated and ration shops were closed. This led to an increase in food prices and an increase in the cost of living. This was the end of Nehruvian Plan and Rajiv Gandhi was prime minister during this period. Family planning was also expanded in order to prevent overpopulation. In contrast to China's strict and binding one-child policy, Indian policy did not rely on the threat of force. More prosperous areas of India adopted family planning more rapidly than less prosperous areas, which continued to have a high birth rate. The major objectives of the plan were Increase in National Income, Modernization of Technology, Ensuring continuous decrease in Poverty and Unemployment, Population Control through Family Planning, etc. The target growth rate of the plan was 5.2 per cent and the actural growth was 5.4 per cent. In that sense the sixth plan was a great success.

7th five year plan(1985-90)

The Seventh Plan emphasized policies and programs which aimed at rapid growth in food – grains production, increased employment opportunities and productivity within the framework of basic tenants of planning. The plan laid stress on improving the productivity level of industries by upgrading of technology. As an outcome of the sixth five year plan, there had been steady growth in agriculture, control on rate of Inflation, and favourable balance of payments which had provided a strong base for the seventh five Year plan to build on the need for further economic growth. The 7th Plan had strived towards socialism and energy production at large. The thrust areas of the 7th Five year plan have been:

- Social Justice
- Removal of oppression of the weak
- Using modern technology
- Agricultural development
- Anti-poverty programs
- Full supply of food, clothing, and shelter
- Increasing productivity of small and large scale farmers
- Making India an Independent Economy

Based on a 15-year period of striving towards steady growth, the 7th Plan was focused on achieving the pre-requisites of self-sustaining growth by the year 2000. The Plan expected a growth in labour force of 39 million people and employment was expected to grow at the rate of 4 per cent per year. Under the Seventh Five Year Plan, India strove to bring about a self-sustained economy in the country with valuable contributions from voluntary agencies and the general populace. It was a great success, the economy recorded 6% growth rate against the targeted 5%.

8th five year plan (1992-97)

The period 1989–91 was a period of economic instability in India and hence no five year plan was implemented. Between 1990 and 1992, there were only Annual Plans. In 1991, India faced a crisis in Foreign Exchange (Forex) reserves, left with reserves of only about US$1 billion. Thus, under pressure, the country took the risk of reforming the socialist economy. P.V. Narasimha Rao was the twelfth Prime Minister of the Republic of India and head of Congress Party, and led one of the most important administrations in India's modern history overseeing a major economic transformation and several incidents affecting national security. At that time Dr. Manmohan Singh (currently, Prime Minister of India) launched India's free market reforms that brought the nearly bankrupt nation back from the edge. It was the beginning of privatisation and liberalisation in India.

Modernization of industries was a major highlight of the Eighth Plan. Under this plan, the gradual opening of the Indian economy was undertaken to correct the burgeoning deficit and foreign debt. Meanwhile India became a member of the World Trade Organization on 1 January 1995. This plan can be termed as Rao and Manmohan model of Economic development. The major objectives included, controlling population growth, poverty reduction, employment generation, strengthening the infrastructure, Institution building, tourism management, Human Resource development, Involvement of Panchayat raj, Nagar Palikas, N.G.O'S and Decentralization and people's participation. Energy was given priority with 26.6% of the outlay. An average annual growth rate of 6.78% against the target 5.6% was achieved.

9th five year plan (1997-2002)

The Ninth Five Year Plan India runs through the period from 1997 to 2002 with the main aim of attaining objectives like speedy industrialization, human development, full-scale employment, poverty reduction, and self-reliance on domestic resources. Ninth Five Year Plan was formulated amidst the backdrop of India's Golden jubilee of Independence.

The main objectives of the Ninth Five Year Plan of India are:

- to prioritize agricultural sector and emphasize on the rural development
- to generate adequate employment opportunities and promote poverty reduction
- to stabilize the prices in order to accelerate the growth rate of the economy
- to ensure food and nutritional securi
- to provide for the basic infrastructural facilities like education for all, safe drinking water, primary health care, transport, energy
- to check the growing population increase
- to encourage social issues like women empowerment, conservation of certain benefits for the Special Groups of the society
- to create a liberal market for increase in private investments

During the Ninth Plan period, the growth rate was 5.35 per cent, a percentage point lower than the target GDP growth of 6.5 per cent.

10th five year plan:

The 10th Five Year Plan (2002-2007) targets at a GDP growth rate of 8% per annum. Taking note of the inabilities of the earlier Five Years Plans, especially that of the 9th Five Year Plan, the Tenth Five Year Plan decides to take up a resolution for immediate implementation of all the policies formulated in the past. This amounts to making appeals to the higher government authorities, for successful completion of their campaigns associated with the rapid implementation of all past policies.

The primary aim of the 10th Five Year Plan is to renovate the nation extensively, making it competent enough with some of the fastest growing economies across the globe. It also intends to initiate an economic growth of 10% on an annual basis.

Chief Objectives of the 10th Five Year Plan:

- The Tenth Five Year Plan proposes schooling to be compulsory for children, by the year 2003.
- The mortality rate of children must be reduced to 45 per 1000 livings births and 28 per 1000 livings births by 2007 and 2012 respectively
- All main rivers should be cleaned up between 2007 and 2012
- Reducing the poverty ratio by at least five percentage points, by 2007
- Making provision for useful and lucrative employments to the population, which are of the best qualities

- According to the Plan, it is mandatory that all infants complete at least five years in schools by 2007.
- By 2007, there should be a decrease in gender discriminations in the spheres of wage rate and literacy, by a minimum of 50%
- Taking up of extensive afforestation measures, by planting more trees and enhance the forest and tree areas to 25% by 2007 and 33% by 2012
- Ensuring persistent availability of pure drinking water in the rural areas of India, even in the remote parts
- The alarming rate at which the Indian population is growing must be checked and fixed to 16.2%, between a time frame of 2001 and 2011
- The rate of literacy must be increased by at least 75%, within the tenure of the Tenth Five Year Plan
- There should be a decrease in the Maternal Mortality Ratio (MMR) to 2 per 1000 live births by 2007. The Plan also intended to bring down the Maternal Mortality Ratio to 1 per 1000 live birth by the year 2012.

The 10th Five year Plan of India in a nutshell:

- Increasing the mobility of all the available financial resources of India, and optimizing them as well
- Setting up of a state-of-the-art infrastructure for all the existing industries in India.
- Encourage the initiative of capacity building within the Indian industrial sector
- Creating a friendly, amiable and pleasant investment environment in India
- Encouraging sufficient transparency in the corporate sectors of India
- Introduction of reforms in the industrial sectors, which are more investor-friendly in nature.

  The plan had an ambitious programme of action. But, the plan had to satisfy with a growth of 7.7 per cent compared to the targeted growth of 8 per cent.

11th five year plan (2007-12)

The Eleventh Five Year Plan had aimed at achieving faster and more inclusive growth. Rapid GDP growth, targeted at 9.0 per cent per annum, was regarded necessary for two reasons: first, to generate the income and employment opportunities that were needed for improving living standards for the bulk of the population; and second, to generate the resources needed for financing social sector programmes, aimed at reducing poverty and enabling inclusiveness.

The economy has performed well on the growth front, averaging 8.2 per cent in the first four years. Growth in 2011-12, the final year of the Eleventh Plan was originally projected at around 9.0 per cent continuing the strong rebound from the crisis, which saw an 8.5 per cent growth in 2010-11. Instead, the economy actually slowed down somewhat in 2011-12 compared to the previous year – a phenomenon common to all major economies reflecting the fact that 2010 was a rebound from depressed levels in 2009. Growth in 2011-12 is likely to be around 8.0 per cent. The economy is therefore, likely to achieve an average GDP growth of around 8.2 per cent over the Eleventh Plan period, which is lower than the 9.0 per cent targeted originally, but higher than the 7.8 per cent achieved in the Tenth Plan. This implies a nearly 35 per cent increase in per-capita GDP during this period. It has also led to a substantial increase in government revenues, both at the Centre and the States, resulting in a significant step-up of resources for the programmes aimed at inclusiveness. A healthy increase in aggregate savings and investment rates, particularly in the private sector, testifies to the strength of our economy as it enters the Twelfth Plan period.

12th Five Year Plan(2012-17)

With the approval of the 12th five year plan by National Development Council the country got new targets in the field of economy and its growth. Besides discussions on the Approach Paper, the NDC also took stock of the economy in the backdrop of sluggish growth and persistent high inflation, and as we know inflation is hovering at very high around the double-digit mark. The country is estimated to register an average growth rate of 8.2 per cent in the XI Plan (2007-12).

The Draft Approach to the 12th Five Year Plan (2012-2017) has been approved by the National Development Council in the December of 2012. The theme of the Approach Paper is **"faster, sustainable and more inclusive growth".** The Approach Paper in broader sense laid down the major targets of the Twelfth Plan, the key challenges in meeting them and the broad approach to be followed to achieve the stated objectives. It proposes a growth target of 8 per cent. However in view of the uncertainties in the global economy, and challenges in the domestic economy, achieving the growth rate of 9 percent may not be feasible unless difficult decisions are taken. And this uncertainty was also discussed in the process.

The growth target was earlier projected high but now Planning Commission feels 8% target is more feasible, and revised the estimate for the second time after slashing it down to 8.2%, just three months back from 9%. So in a new trend moving away from previous practice of presenting single growth projection, the Planning Commission has come out with three different economic scenarios for 12th Five-Year Plan. According to planning commission, these scenarios will be a function of economic decisions and "policy logjam", and in worse scenario the GDP growth could slow down to 5-5.5 per cent.

In a good move, the document proposes to bring down poverty by 10 percentage points by the end of the 12th Plan and generate five crore new jobs in non-farm sector. For infrastructure sector the document talks about the positive efforts which should be made to increase investment in this sector to 9 per cent of the GDP by the end of the Plan period.

Some other major targets of the 12th Five Year Plan are:

- Increasing green cover by one million hectare every year and adding 30,000 MW of renewable energy generation capacity in the Plan period.
- To reduce emission intensity of the GDP in line with the target of 20-25 reduction by 2020 over 2005 levels.
- Raising agriculture output to 4 per cent for the full Plan.
- Manufacturing sector growth to 10 per cent for the full Plan.
- Target of adding over 88,000 MW of power generation capacity in the 12th five year plan.

The five year policy has also said that to achieve the targeted growth rate, the fixed investment rate should rise to 35 percent of GDP (at constant prices) by the end of the 12th Plan, yielding an average fixed investment rate of 34 percent of GDP (at constant prices) for the entire Plan as a whole. The Plan also emphasizes a broad definition of inclusiveness, which encompasses a spread of benefits to the weaker sections, inducing SC/STs, OBCs and minorities, and also regional balance in development, a statement said. It also stresses on the need to speed up the pace of implementation of infrastructure projects which is critical for removing supply bottlenecks which constrains growth in other sectors, and also for boosting investors sentiment to raise the overall rate of investment. The policy document also proposes that beneficiary payments across a large number of schemes, which have experienced leakages in the delivery system may be carried out through the use of Aadhaar (UID) platform, it added. It estimates resource availability for the 12th Plan at Rs 80,50,123 crore in current prices for Centre and states together. This implies the public sector resources for the 12^{th} Plan would be 11.8 percent of GDP against 10.96 percent realized during the 11th Plan (2007-12), it added.Besides other things, the 12th Plan seeks to achieve 4 percent agriculture sector growth during the Plan period. The growth target for manufacturing sector has been pegged at 10 percent. The total plan size has been proposed at Rs 47.7 lakh crore, 135 percent more that the investments realised in the 11^{th} Plan (2007-12).

Achievement of Economic Planning

Since 1950-51, economic planning has been implemented in our country. Now eleven five year plans are over. It has resulted in several development initiatives in our country. The brief points of developments are mentioned here under.

1. Higher Economic growth
2. Reduction of income inequalities
3. Increase in agricultural production
4. Increase in industrial production
5. Modernisation of technology
6. Modernisation of economy
7. All round development of economy

Failures of planning in India

Despite the achievements mentioned above, the planning process in India has accompanied by several failures. The major ones are mentioned here under;

1. Rapid economic growth not fulfilled
2. Objectives of Reduction of inequalties not fulfilled
3. Objectives of self reliance not achieved
4. Unemployment problems still remains
5. Balance regional growth not achieved

EXERCISES

Short Questions

1. Define Planning

2. Planning Commission

3. Role of NDC in Planning of India

4. Bombay Plan

5. Gandhian Plan
6. Inclusive growth
7. Peoples' Plan
8. Broad objectives of Indian Five Year Plans
9. Specify the objectives of 12th Five Year Plan.

Objective questions.

1. Which of the following bodies finalizes the Five Year Plan proposals? [c]

(a) Planning Commission (b) Union Cabinet (c) National Development Council

(d) Ministry of Planning

2. Who among the following is the Chairman of the Planning Commission? [c]

(a) President (b) Speaker of Lok Sabha (c) Prime Minister

(d) Union Minister of Planning

3. The Planning Commission in India was set up in [b]

(a) 1947 (b) 1950 (c) 1951 (d) 1952

4. Planning in India derives its objectives from [b]

(a) Fundamental Rights (b) Directive Principles of State policy

(c) Fundamental Duties (d) Preamble

5. The concept of Five Year Plans in India was introduced by [b]

(a) Lord Mountbatten (b) Jawaharlal Nehru

(c) Indira Gandhi (d) Lal Bahadur Shastri

6. National Development Council was set up in [d]

(a) 1948 (b) 1950 (c) 1951 (d) 1952

7. The first attempt to initiate economic planning in India was made by[c]

(a) Balwantrai Mehta (b) Vallabhbhai Patel

(c) M. Visvesvaraya (d) Jawaharlal Nehru

8. The period of the First Five Year plan was from [b]

(a) 1950-51 to 1954-55 (b) 1951-52 to 1955-56

(c) 1952-53 to 1956-57 (d) None of these

9. The mian objective of First Five Year Plan was [c]

(a) Industrial growth (b) Economic growth

(c) Development of agriculture including irrigation and power projects

(d) Self reliance

10. Which one of the following is the task of the Planning Commission [a]

(a) Preparation of the plan (b) Implementation of the plan

(c) Financing of the plan (d) Both (a) & (b)

11. Which of the following Five Year Plans was terminated one year before its completion? [d]

(a) Second (b) Third (c) Fourth (d) Fifth

12. Economic Planning is a subject [a]

(a) In the Union List (b) In the State List

(c) In the Concurrent List (d) Unspecified in any special list

13. Which of the following are not members of the National Development Council? [b]

(a) The Prime Minister (b) the President

(c) Chief Ministers of states (d) Members of the Planning Commission

14. The Second Five Year Plan laid more stress upon [b]

(a) Agriculture ' (b) Industrialization

(c) Removing poverty (d) Self reliance

15. Attainment of economic self reliance and removal of poverty were the main objectives of [c]

(a) First Five Year Plan (b) Fourth Five Year Plan

(c) Fifth Five Year Plan (d) Sixth Five Year Plan

16. For internal financing of Five Year Plans, the government depends on:[d]

(a) Taxation only (b) Taxation and public borrowing

(c) Public borrowing and deficit financing

(d) Taxation, public borrowing & deficit financing

17. The Eighth Five Year Plan gave priority to:[d]

(a) Industrial growth (b) Promotion of exports

(c) Increasing agricultural productivity (d) Employment generation

18. The Planning Commission is: [c]

(a) A Ministry (b) A Government department

(c) An Advisory body (d) An Autonomous Corporation

19. The strategy of rolling plan was adopted during the Prime Ministership of [c]

(a) Lal Bahadur Shastri (b) Indira Gandhi (c) Morarji Desai (d) Rajiv Gandhi

20. Who among the following authored the book 'Planned Economy for India' in 1934? [c]

(a) D.R. Gadgil (b) M.N. Roy (c) M. Viswesvaraya (d) V.K.R.V Roy

21. The Planning Commission implemented three Annual Plans instead of Five Year Plans between. [a]

(a) The Third and Fourth Plan (b) The Fifth and Sixth Plan

(c) The Sixth and Seventh plan (d) The Seventh and Eighth Plan

22. What is the correct sequence of the following strategies used for Five Year Plans in India? [c]

1. Balanced growth
2. Rehabilitation of the economy
3. Industrial development

(a) 1,3,2 (b) 2,1,3 (c) 2,3,1 (d) 3,2,1

23. The steel plants at Durgapur, Bhilai and Rourkela were established during the period of: [b]

(a) First Five Year Plan (b) Second Five Year Plan

(c) Third Five Year Plan (d) Fourth Five Year Plan

24. Eighth Five Year Plan covered the period: [d]

(a) 1990-95 (b) 1989-94 (c) 1991-96 (d) 1992-97

25. The term 'Hindu rate of growth' refers to the 3.70% per annum growth rate achieved by the Indian economy over the first six Five Year Plans'. The term was coined by: [c]

(a) J.N. Bhagwati (b) K.N. Raj

(c) Raj Krishna (d) Sukhamoy Chakravarty

26. Which of the following statements is correct? [b]

(a) Planning Commission is a constitutional body

(b) The Prime Minister is the Chairman of the Planning Commission.

(c) The Minister of Planning is always necessarily the Deputy Chairman of Planning Commission

(d) The draft plan is prepared by the National Development Council

27. Economic planning is an essential feature of:[d]

a) Dual economy (b) Mixed economy

(c) Capitalist economy (d) Socialist economy

28. The main model that formed the basis of the strategy of the Second Five Year Plan was formulated by [b]

(a) V.K. R.V. Rao (b) PC. Mahalonobis

(c) Dr.Gadgil (d) P.R.Brahamandas

29. A major shift in the Eighth Five Year Plan from it preceding ones was:[b]

(a) The concentration of investment in infrastructural sector

(b) Major investment in agriculture with a view to promoting exports

(c) Major investment in sectors where industrial sickness has been a chronic problem

(d) The significant reduction in public sector outlays

30. The objective of 'inclusive growth' was first used in which of the following plans?[d]

a) First b) Eighth c) Tenth d) Eleventh

MODULE V

ISSUES IN DEVELOPMENT

5.1 The Concept of Poverty

Poverty is a plague as it is prevalent in almost all countries in the world and it has many faces and dimensions. Therefore it is difficult to define the concept poverty in precise. Poverty is always defined according to the conventions of society in which it occurs. But in the recent years, the concept of poverty has been refined and made more comprehensive. The New World requires better and more scientific ways to assess the concept of poverty in the society. Now its multidimensional aspect is recognized and uses a multidisciplinary approach to assess poverty. Poverty is not simply a social phenomenon but also include economic, political, historical, geographical and cultural aspects.

Various attempts have been made by societies to define poverty. In human terms poverty means little to eat and wear, and in economic terms the poverty means the inability to attain a minimum standard of living. It is natural to view poverty as the failure to meet the basic requirements to maintain a minimum standard of living. This minimum standard of living may vary from society to society. While biological requirement and nutritional norms provide the most elementary concept of a minimum standard of living, modern understanding of poverty requires other factors such as school enrolment, infant mortality, immunization, malnutrition, women empowerment, overall standard of living, asset holding etc.

Poverty can be defined as a social phenomenon in which a section of the society is unable to fulfill even its basic necessities of life. In India the generally accepted definition of poverty emphasizes minimum level of living rather than a reasonable level of living. In economics there are two important classification of poverty; Absolute Poverty' and 'Relative Poverty'.

5.2 Absolute Poverty and Relative Poverty

Absolute Poverty is the sheer deprivation or non-fulfillment of bare minimum needs of existence- of food, shelter, health or education. It is based on the absolute needs of the people and people are defined as poor when some absolute needs are not sufficiently satisfied. Hence according to this type poverty is treated as deprivation. Most of the developing countries are experiencing such type. An absolute poverty line is based on the cost of minimum consumption basket based on the food necessary for a recommended calorie intake.

Relative Poverty is related with high income countries, where people are poor because they cannot maintain or equivalent to others in the society. There should be differences in living standards among the people. It reflects economic distress, despair and dissension that stem from serious inequalities in income and wealth .The relative poverty line varies with the level of average income. Relative poverty is based on inequality and differences in standard of living. According to the relative concept of poverty, people are poor because

From this classification we know that poverty is not inequality. Poverty is only one of the evil consequences of inequality. Whereas poverty is concerned with the absolute standard of living of a part of the society i.e.; the poor, inequality refers to relative living standards across the whole society.

5.3 Measurement of Poverty

Once we understand poverty, it is essential to measure it with its various dimensions. The measurement of poverty is needed to plan policies to check this global phenomenon. Many factors were listed, some of them are life expectancy, mortality, maternality, safe drinking water, pure air, women empowerment, energy consumption, literacy, asset holding, sanitation, primary health facilities, clean surroundings etc. most of these are derived with income. Therefore consumption data can be used to measure poverty.

5.3.1 Poverty Line

Poverty line is the most widely used measure for assessing poverty. Under this method, people are counted as poor when their measured standard of living is below a minimum acceptable level-known as Poverty Line. The poverty line in India is defined as 'the level of private consumption expenditure, which ensures a food basket that would supply the required amount of calories'. Actually in India the Planning Commission estimates the poverty on the basis of Calorie intake. By considering age, sex, activity etc., Indian Council of Medical Research (ICMR) proposes 2400 calorie intake for the rural person per day and 2100 calorie per person per day in urban. The calorie requirements in the rural areas is higher because people engaged in heavy work more in rural areas than in urban areas.

5.3.2 The Head-Count Method

The Head-count method is the proportion of the population whose measured standard of living is less than the poverty line. While useful as a quick indication of scope of the poverty problem, the Head-count measure is insensitive to differences between individuals in the depth or severity of their poverty.

5.3.3 Poverty Gap Method

The poverty Gap is defined as the aggregate short fall in income of all the poor persons when taken from the poverty line. In other words, this method estimates the short fall of each person's income (expenditure) from the poverty line and aggregates the shortfall of the poor. This measure gives an indication of the depth of poverty. This indicates the amount which may be directly transferred to the poor persons to eradicate poverty. From this angle this method is better than the Head count method, the formula for the poverty Gap is:

$$G=\sum_{i=1}^{q}(Z-Yi)$$

Where G is the poverty gap

Z is the poverty line and

Y is the income/expenditure of the 'ith' household below the poverty line.

5.3.4 . Sen's Poverty Index

The Head count method and poverty gap methods did not take the intensity of poverty i.e., all the people below the poverty line are treated as the same manner.

Sen's poverty index gives more importance to relatively poor persons. It gives a weight of 'one' to the person with the highest income below the poverty line and weight 'two' to the person with the next highest income and so on, and finally gives a weight of 'q' to the poorest person. (q is the number of persons below the poverty line). The formula for Sen's poverty index (P) is

$$P=\frac{2}{(\sqrt{+1})NZ}(\mathrm{Z}-\mathrm{Yi})(\mathrm{q}+1-\mathrm{i})$$

Where, q is the number of persons below the poverty line

Z is the poverty line

Y_i is the income (expenditure) of the ith household arranged in the descending order of the magnitude.

N is the total number households.

5.3.5 Foster Greer-Thornbeck Measure

This measure is sensitive to the problem of extreme poverty. It is most commonly defined as the square of the poverty gap, divided by the population. By using the square of the poverty gap, the FGT gives heavier weight than the PGI to the poverty of the very poor, because all income gaps are squared.

5.4 The Concept of Inequality

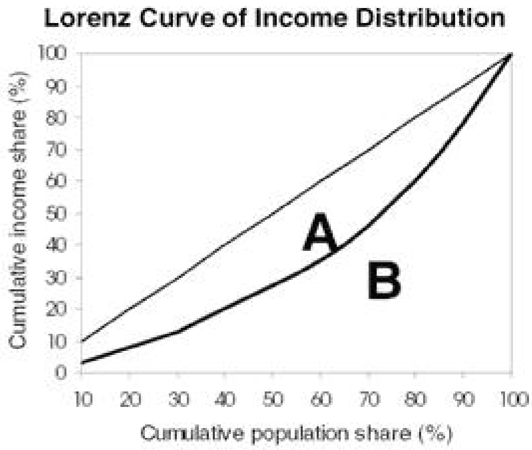
While the concept of poverty is rooted in the "lack of access" or "a low level of access" to food, nutrition, shelter, education and other services. Inequality is related to "unequal access" or "different degrees of access" of different individuals or groups of individuals to opportunities, services and benefits. Inequality is, thus, a more general concept than poverty. It looks at the relative levels of access of different groups to development opportunities and benefits. The "different levels of access" in the concept of inequality also include the low level of access below which people are considered poor. In fact, the low level of access or the limit (like for example, the calorie limit for consumption) that may be set for defining poverty will itself include a number of lower levels of access.

5.5 Measurement of Inequality

A second definition of welfare which is often considered in analysis is that of 'relative' poverty, defined as having little in a specific dimension compared to other members of society. This concept is based on the idea that the way individuals or households perceive their position in society is an important aspect of their welfare. To a certain extent, the use of a relative poverty line in the previous sections does capture this dimension of welfare by classifying as 'poor' those who have less than some societal norm.

The overall level of inequality in a country, region or population group – and more generally the distribution of consumption, income or other attributes – is also in itself an important dimension of welfare in that group. Inequality measures can be calculated for any distribution—not just for consumption, income or other monetary variables, but also for land and other continuous and cardinal variables. Some commonly used measures are presented below.

5.5.1 Gini-coefficient of Inequality



This is the most commonly used measure of inequality. The coefficient varies between 0, which reflects complete equality and 1, which indicates complete inequality (one person has all the income or consumption, all others have none). Graphically, the Gini coefficient can be easily represented by the area between the Lorenz curve and the line of equality.

On the figure to the right, the Lorenz curve maps the cumulative income share on the vertical axis against the distribution of the population on the horizontal axis. In this example, 40 percent of the population obtains around 20 percent of total income. If each individual had the same income, or total equality, the income distribution curve would be the straight line in the graph – the line of total equality. The Gini coefficient is calculated as the area A divided by the sum of areas A and B. If income is distributed completely equally, then the Lorenz curve and the line of total equality are merged and the Gini coefficient is zero. If one individual receives all the income, the Lorenz curve would pass through the points (0,0), (100,0) and (100,100), and the surfaces A and B would be similar, leading to a value of one for the Gini-coefficient.

It is sometimes argued that one of the disadvantages of the Gini coefficient is that it is not additive across groups, i.e. the total Gini of a society is not equal to the sum of the Ginis for its sub-groups.

5.5.2 Theil-index

While less commonly used than the Gini coefficient, the Theil-index of inequality has the advantage of being additive across different subgroups or regions in the country. The Theil index, however, does not have a straightforward representation and lacks the appealing interpretation of the Gini coefficient. The Theil index is part of a larger family of measures referred to as the General Entropy class.

5.5.3. Decile dispersion ratio

Also sometimes used is the decile dispersion ratio, which presents the ratio of the average consumption or income of the richest 10 percent of the population, divided by the average income of the bottom 10 percent. This ratio can also be calculated for other percentiles (for instance, dividing the average consumption of the richest 5 percent – the 95 th percentile – by that of the poorest 5 percent – the 5th percentile). This ratio is readily interpretable, by expressing the income of the rich as multiples of that of the poor.

5.5.4. Share of income/consumption of the poorest x%

A disadvantage of both the Gini coefficients and the Theil indices is that they vary when the distribution varies, no matter if the change occurs at the top or at the bottom or in the middle (any transfer of income between two individuals has an impact on the indices, irrespective of whether it takes place among the rich, among the poor or between the rich and the poor). If a society is most concerned about the share of income of the people at the bottom, a better indicator may be a direct measure, such as the share of income that goes to the poorest 10 or 20 percent. Such a measure would not vary, for example, with changes in tax rates resulting in less disposable income for the top 20 percent at the advantage of the middle class rather than the poor.

5.6 . The Concept of Gender

Gender is a relatively recent concept in social science. The term gender refers to the socially-constructed differences between men and women. It is the personal sexual identity of an individual, regardless of the person's biological and outward sex. Gender refers not to male and female, but to masculine and feminine - that is, to qualities or characteristics that society ascribes to each sex. People are born female or male, but learn to be women and men. Perceptions of gender are deeply rooted, vary widely both within and between cultures, and change over time. But in all cultures, gender determines power and resources for females and males. Sex refers to the biological and physiological characteristics that define men and women while gender refers to the socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for men and women. In all societies, men and women play different roles, have different needs, and face different constraints.

Gender roles differ from the biological roles of men and women, although they may overlap. For example, women's biological roles in child bearing may extend their gender roles to child rearing, food preparation, and household maintenance. Social and economic factors can reinforce or decrease gender-based disparities. These factors include; institutional arrangements, the formal legal system, socio-cultural attitudes and ethnic and class/caste-based obligations, religious beliefs and practices etc.

There are certain important concepts related with the concept of Gender. They are: Gender Roles, Gender Relations, Gender Discrimination, Gender Equality, Gender Equity, Gender Analysis, Gender Balance, Gender Mainstreaming

1. **Gender Roles** are those behaviours, tasks and responsibilities that a society considers appropriate for men, women, boys and girls.

2. **Gender Relations** are the ways in which a society defines rights, responsibilities and the identities of men and women in relation to one another.
3. **Gender Discrimination** is any exclusion or restriction made on the basis of gender roles and relations that prevents a person from enjoying full human rights.
4. **Gender Equality** is when women and men enjoy equal rights, opportunities and entitlements in civil and political life.
5. **Gender Equity** means fairness and impartiality in the treatment of women and men in terms of rights, benefits, obligations and opportunities.
6. **Gender Analysis** is the study of the different roles of women and men in order to understand what they do, what resources they have, and what their needs and priorities are.
7. **Gender Balance** is the equal and active participation of women and men in all areas of decision-making, and in access to and control over resources and services.
8. **Gender Mainstreaming** is the globally recognized strategy for achieving gender equality.

5.7. Gender Issues

Almost every aspect of life is gendered. How we eat, sleep, work, care for children, play, and communicate are all colored by gender. In developing countries, the challenge of survival brings gender issues sharply into focus. As women and men have different needs and play different social and economic roles in societies, there are gender issues. This perspective includes paying attention to the special needs of women and girls during repatriation and resettlement, rehabilitation and reintegration. Some of the major gender issues can be explained in detail as follows.

1. Masculinity, males and conflict

Men and boys are often victims of brutal indoctrination during their recruitment to an armed group; this can involve forced killings, drug abuse, and rape. Males commonly lose their traditional male role as providers for the family, may find themselves displaced from their family's homes, or be unable to find employment. Some find status and power in sexual violence and possession and use of weapons. Post-conflict programs should focus on ways to draw young men into a cohesive society, rather than on punishing and controlling them. The latter only reinforces a cycle of exclusion and punishment and perpetuates violent behavior.

2. Femininity, females and conflict

Women are not only the victims of conflict; they are often actively involved in the fighting. Women represent between one-tenth to one-third of all combatants in regular or irregular armies (e.g., guerilla movements), and often participate in other active roles, including support functions. Demobilization and reintegration programs (DRPs) for ex-combatants should represent the economic, legal and psychological needs of both female and male excombatants. These needs are usually not met because many women tend not to register for DRPs for fear of being stigmatized for their role in the conflict or for having had illegitimate children resulting from rape.

3. Gender-Based Violence (GBV) and HIV/AIDS

Women and men are both vulnerable to GBV during conflict, albeit in different ways. Women are often victims of heightened sexual abuse and trafficking during conflict, as they are seen as a form of booty by enemy soldiers. Sexual abuse of women from enemy camps is seen as a means of demoralizing the enemy.

4. Information and Communication Technologies (ICT).

Women and men have different needs and constraints when accessing and using **ICT**. In many societies, women's and men's access to and use of technology are rooted in behavioral, cultural, and religious traditions. Unless explicit measures are taken to address the constraints women face, advances in ICT may increase gender disparities and their potential impact will be reduced. Gender-responsive ICT can make technologies, from telephones to computers, available to more people and offer ways for both women and men to access information and markets, and participate in new income generating activities. When ICT policies and programs recognize the different constraints women and men face, ICT will contribute to reducing women's burden of labor in time consuming tasks, provide income generating activities, and provide an important source of employment in both ICT and other fields.

5. Infrastructure

The infrastructure sector is often assumed to be gender neutral, with women and men benefiting equally from projects. Females and males, however, have different roles, responsibilities and constraints, which result in gender-based differentials in demand for and use of infrastructure facilities and services. The development effectiveness and sustainability of the infrastructure sector could increase significantly by addressing gender differences in demand and utilization. This involves incorporating a gender perspective in selecting and designing infrastructure interventions, assessing safeguards issues, and conducting monitoring and evaluation.

6. Transport

Because women and men in developing countries have different transport needs and priorities, they are frequently affected differently by transport interventions. For example, Rural Transport Projects that build roads for motorized transport often do not benefit rural women, who mainly work and travel on foot in and around the village. Urban Transport Systems, which are designed to transport people to and from employment centers, may also respond inadequately to the needs of women, who must combine income generation with household activities, such as taking children to school and visiting the market.

The failure of the transport sector in meeting women's needs and priorities affects women negatively in several ways. Because of lack of access to adequate transport, women enjoy less mobility than men; their access to markets and employment is circumscribed. Women's safety suffers when their needs are not taken into account in transport project design, for instance due to the absence of street lighting. Women's health is also negatively affected by the lack of adequate transport. Every minute a woman dies in child birth, but many of these deaths (and the disability caused by obstructed labour) could be avoided with timely access to transport.

Furthermore, poor women, who balance productive, social, and reproductive roles, often have higher demands on their time than poor men. Gender-responsive infrastructure interventions can free up women's time by lowering their transaction costs. This, in turn, increases girls' school enrollment and facilitates women's participation in income-generation and decision-making activities. Addressing transport-related gender inequalities is smart economics. It benefits society as a whole. Reducing women's time costs and increasing their mobility and safety increases women's productivity which makes society as a whole more productive

7. Water and Sanitation

Women and men generally have very different roles in water supply and sanitation (WSS) activities. These differences are particularly evident in rural areas. Often women are the main users, providers, and managers of water in rural households. Women are also the guardians of household hygiene. Men are usually more concerned with water for irrigation or for livestock. Hence women tend to benefit most when access to water, and the quality and quantity of water improves. Improvements in WSS infrastructure are likely to shorten women's and girls' time spent carrying heavy containers to collect water, thereby freeing up their time for income generating activities and school attendance, respectively. Given their long established, active role in WSS, women generally know about current water sources, their quality and reliability, any restrictions to their use, and how to improve hygiene behaviors. While women were often more direct users of water – especially in the household – men traditionally had a greater role than women in public decision making. It is essential to fully involve both women and men in demand driven WSS programs, where communities decide what type of systems they want and are willing to help finance.

8. Governance

The current approach to reducing poverty and promoting economic growth stresses the need for communities to be able to influence the public institutions that affect their well-being. Good governance is central to this approach: public institutions must be efficient, transparent, and accountable; and the processes of governance must be inclusive and participatory so that all citizens have opportunities to demand accountability from their governments. Gender equality is an important goal in itself and a means for achieving development. Development policies and institutions must ensure that all segments of society - both women and men - have a voice in decision making, either directly, or through institutions that legitimately represent their interests and needs. Yet, persistent and pervasive gender disparities in opportunities, rights vis-à-vis the state and public institutions, and voice, particularly limit women's ability to participate as full citizens in social, economic, and political life. The exclusion of women from full participation constrains the ability of public sector policies and institutions to manage economic and social resources effectively. Such gender-based exclusion compromises the prospects for high-quality service delivery. There are several key aspects of public sector good governance, but a few of them in particular have specific gender-relevant considerations worth examining:

- **Citizenship:** To what extent do policies and practices support women and men to realize their duties, rights, and access to services as citizens?
- **Legislation and enforcement:** How do legal and judicial systems improve the socio-economic and legal status of women and men? How effectively do the legal and justice sectors address women's and men's status and protection under the law?
- **Public expenditures:** To what extent do public expenditures reflect governments' explicit gender equality goals and target the delivery of high-quality services to all citizens?
- **Structures and processes of governance:** How can women's participation in political decision- making processes be realized? Do the structures and processes for representation at central and decentralized levels focus on including interest groups which have previously been excluded? Do they include women in critical numbers in key institutions, e.g., parliaments and local governments?

Gender considerations should be incorporated into five key Private Sector Development areas also: disparities in asset ownership; Labour market imbalances; access to finance; access to markets; and business enabling environment.

1. Disparities in asset ownership

In many countries there are gender disparities in asset ownership. Land is often the most valued asset, and where women are constrained by law or custom in owning land, they are unable to use land as an input into production or as collateral for credit. This is inefficient and may hamper growth. An example of how to address this issue comes from Vietnam, where land title certificates have been reissued with the names of both husbands and wives, giving women land use rights previously denied to them.

2. Labor market imbalances

Taboos and prejudices against hiring women are costly to society as a substantial proportion of its productive potential is stifled. Scepticism against female workers may hamper private sector development: as it restricts total labour supply, the price of male labour is pushed up and artificial labour shortages may result. In Lesotho, the World Bank funded a sensitization program aimed at increasing female participation in road construction activities.

3. Access to financial services

Designing financial institutions in ways that account for gender specific constraints – whether by substituting for traditional forms of collateral or by delivering financial services closer to homes, markets and workplaces – can increase access to savings and credit and affect the relative viability and competitiveness of female run enterprises. In parts of West Africa, "mobile bankers" bring financial services to clients, eliminating the need to travel in order to save and borrow.

4. Access to markets

Women's seclusion from the public arena, higher time poverty, and lack of mobility limit their access to markets in various ways. For instance, women usually have less information about prices, rules and rights to basic services.

5. Business enabling environment

Women often benefit more than men from business enabling environment reforms, as their businesses tend to have more problems with customs, courts, business registration, tax rates and tax administration. To address this issue, the *Gender and Growth Assessment tool* was developed to help countries identify key investment climate constraints for women and provide a roadmap of needed reforms, which local organizations can work on implementing following assessment completion. The tool was a World Bank Group effort led by IFC Gender Entrepreneurship Markets (GEM) in Uganda, and has been replicated in Kenya, Tanzania, and Ghana. The issue of women's access to networks cuts across all key areas. As social norms may discourage women from mixing freely with men, participation in women only business associations can help women make connections, share information, identify business opportunities, generate cross referrals, and act as support for entrepreneurs who might otherwise feel isolated. Business organizations can also lobby for a more business friendly environment for women in general. In Afghanistan, an important task for the new Ministry of Women's Affairs was to set up the Afghan Women's Business Council, with support from UNIFEM.

There are certain other areas in which the gender is an important issue and need more attention.

1. Poverty
2. Household food security
3. Women's work Knowledge, culture and power
4. Population, reproductive rights and health care
5. Forest resource management
6. Energy
7. Sustainable agriculture and farming systems
8. Land reforms and land rights
9. Water resources
10. Common property and resource management
11. Migration and displacement
12. Credit and enterprise development
13. Science and Technology
14. Urban environment and services
15. Housing Market economy and industrialization

16. Women's relationship with nature
17. Women's movements
18. Gender, environment and development

5.8 The Concept of Missing Women

It is often said that women make up a majority of the world’s population. They do not. This mistaken belief is based on generalizing from the contemporary situation in Europe and North America, where the ratio of women to men is typically around 1.05 or 1.06, or higher. In South Asia, West Asia, and China, the ratio of women to men can be as low as 0.94, or even lower, and it varies widely elsewhere in Asia, in Africa, and in Latin America.

At birth, boys outnumber girls everywhere in the world, by much the same proportion—there are around 105 or 106 male children for every 100 female children. Just why the biology of reproduction leads to this result remains a subject of debate. But after conception, biology seems on the whole to favor women. Considerable research has shown that if men and women receive similar nutritional and medical attention and general health care, women tend to live noticeably longer than men. Women seem to be, on the whole, more resistant to disease and in general hardier than men, an advantage they enjoy not only after they are forty years old but also at the beginning of life, especially during the months immediately following birth, and even in the womb. When given the same care as males, females tend to have better survival rates than males.

The fate of women is quite different in most of Asia and North Africa. In these places the failure to give women medical care similar to what men get and to provide them with comparable food and social services results in fewer women surviving than would be the case if they had equal care. In India, for example, except in the period immediately following birth, the death rate is higher for women than for men fairly consistently in all age groups until the late thirties. This relates to higher rates of disease from which women suffer, and ultimately to the relative neglect of females, especially in health care and medical attention. Similar neglect of women vis-à-vis men can be seen also in many other parts of the world. The result is a lower proportion of women than would be the case if they had equal care—in most of Asia and North Africa and to a lesser extent Latin America. There are several reasons, both visible and not visible, for this staggering deficiency in the total number of women in India. Unfortunately, the country faces one of the highest female feticide and infanticide rates in the world. About a million female fetuses are aborted in India every year.

The most visible and violent form of discrimination and methods for female infanticide range from starvation to poisoning. Furthermore, girls in India traditionally have been considered less important or useful, and so face a life-long process of discrimination. They are not provided with the necessary nutrition and health care, which leads to a shorter lifespan than should be expected.

“Missing women”—a concept developed by Amartya Sen (1990, 1992) in an essay in the New York Review of Books in 1990, and expanded upon in his subsequent academic work-refers to the observation that in parts of the developing world, notably in India and China, the ratio of women to men is suspiciously low. Sen translated those skewed sex ratios into absolute numbers by calculating the number of extra women who would have been alive (say in China or India) if these countries had the same ratio of women to men as in areas of the world in which they purportedly receive similar care. Amartya Sen originally estimated that more than a hundred million women were "missing" (in the sense that their potential existence had been eliminated either through sex selective abortion, infanticide or inadequate nutrition during infancy). According to estimations of Sen around 100 million women are "missing" worldwide (more recent estimates suggest that there are 50 million missing women in India alone). Sen argued that in countries like India, Pakistan and Bangladesh the cultural preference for boys - in particular in rural areas - potentially has led to a terrible mistreatment of young girls.

Despite the empirical evidence supporting Sen's views, some researchers have proposed an alternative explanation for the "missing women" phenomenon.

Originally some other economists, notably Emily Oster, questioned Sen's explanation, and argued that the shortfall was due to higher prevalence of the Hepatitis B virus in Asia compared to Europe. Further research however, has established that the prevalence of hepatitis B cannot account for more than an insignificant fraction of the missing women." As a result, Sen's explanation for the phenomenon is still the most accepted one.

Oster’s findings have subsequently been disputed by several researchers. Monica Das Gupta, an economist at the World Bank, pointed out that in Chinese families whose first children were daughters, later births tended to be sons, concluding that “cultural factors still provide the overwhelming explanation for the “missing” females”. In 2008, Ming-Jen Lin and Ming-Ching Luoh of Taiwan University found that “Hepatatis B can only account for 1.8% of the number of missing women” in China, concluding that their evidence was “consistent with the son preference hypothesis”.

In April 2008, Ms. Oster, the original proponent of the Hepatitis B explanation, published a working paper refuting the conclusion of her previous research. Working together with three Chinese researchers, she collected data on the offspring gender for 67,000 people in China, of which 15% were hepatitis B carriers. The resulting working paper entitled “Hepatitis B Does Not Explain Male-Biased Sex Ratios in China” concludes that “hepatitis B carrier rates cannot explain male-biased sex ratios or the “missing women" in China.” In conclusion, Sen’s original attribution of "missing women" to societal discrimination and neglect of women and girls remains the strongest explanation

5.9 Environment verses Development

Environmental protection and economic developments might be the biggest issues in the 21st century. They are both important because they are vital to human's future and welfare. However, since the budget and the recourse are limited, governments must choose between these two issues. Development and environment need to be seen as complementary, not antagonistic terms. After all, if there is no Earth left, where will development take place?

Today, when the world is facing the harmful consequences of global warming and depletion of resources, environment conservation has become a topic of global significance, not just an issue with local importance. The matter is of paramount relevance in a developing economy like ours, as environment degradation drastically offsets improvements achieved by economic prosperity, apart from having serious implications for distributive justice. Although the issue has gained more importance in today's grave scenario, environment conservation is still a neglected sector, with excessive emphasis on 'growth' in terms of numbers, without focusing on 'development' in terms of quality. Improper implementation of policies, coupled with indifferent attitudes of authorities has accentuated the ineffectiveness of environment strategy. This has led to a host of problems like mounting pressures on depleting resources and poor waste management resulting in deplorable conditions and health hazards. Thus it is imperative to frame environment policy with holistic considerations of health, sanitation and overall development of the populace.

The 'Development Versus Environment' controversy has caught the popular imagination because nobody can remain completely untouched by either the economic development or its environmental implications. It is undeniable that the development of economy has brought great changes in everyone's life and significantly elevated our living standards. Therefore, some people argue that the development of economy must come before all else, including the environmental concerns. Under no circumstances should we seek temporary economic development at the expense of the environment and resources because if we do so, we could never achieve sustainable development of economy and such a practice is not in accord with human welfare.

If the governments neglect the importance of environmental protection when promoting the economic development, it could make a profit in the short term but suffer a larger loss in the long run. It is because of the obvious fact that we need to utilize resources from the environment for developing economy and they can be depleted or polluted if we overlook the environmental protection. Government could not improve people's lives through developing the economy at the expense of environment and resources, instead, people will have to endure unfavorable living environment and lose happiness. One of the biggest challenges facing governments as the new century is how to balance environmental protection with the demands for development. If deterioration of the global environment over the past several decades is any guide, the coming century does not hold out much promise for reversing these trends, many environmentalists are warning as the millennium comes to a close. Rising Earth temperatures, record losses in biodiversity and species extinction, increasing demands and dwindling supplies of fresh water, only seem to be getting worse. Admittedly, with the development of economy, the qualities of our living have been improved notably. People are able to earn more money, live in bigger houses and afford better medical treatment. However, we actually can realize a better development of economy under the condition of conserving environment. For instance, government can attract tourists and investors by clean and beautiful environment. The tourism industry and foreign investment can also facilitate the economic development.

The greed of the man of business is unbounded and blind. It has often led to total neglect of environment or public safety. It has led to a conviction among many people that development per-se is undesirable and disruptive of environment. Since the atmosphere and environment are not divided according to the national boundaries but are common to the entire global community, only international, united efforts can impact the global warming and ozone layer depletion. Those countries who are contributing more to the environmental degradation have to make greater efforts and exercise greater abnegation in their consumption-patterns to reduce the rate of pollution.

More awareness and sensitivity towards the environment is the key to environmental conservation. A possible measure for this would be to inculcate awareness among students. Providing infrastructure for waste management, water harvesting and paper recycling in schools and colleges can go a long way in sowing the seeds of environment consciousness in young minds. Thus, positive encouragement for judicious use (concessional rates of solar equipment and efficient appliances) and negative incentives for misuse of resources (higher taxes for inefficient cars and high energy consuming buildings) should be provided.

Apart from this, at the micro level, each one of us can contribute towards the betterment of the environment, simply by living by the principle of “Reduce, Reuse and Recycle”. Really, it does not take much time or effort to be judicious about the usage of precious resources like electricity, water and paper. Small steps do have a profound impact-and the sooner we realize this, the better it will be for our Earth and our future generations. In conclusion, considering the fact that developing economy at the expense of the environment is not sustainable and does harm to human being’s welfare, government should definitely abandon this practice.

5.10 The Concept of Sustainability

The concept of sustainable development emerged from the post-War environmental movement, which recognized the negative impacts of human growth and development on the environment and communities. The term sustainable development came to prominence through the United Nations Brundtland Commission. The commission’s 1987 report, Our Common Future defined sustainable development as; “Development which meets the needs of the present without compromising the ability of future generations to meet their own needs”. Sustainable development thus comprises three elements - economic, social and environmental - which have to be considered in equal measure at the political level

Sustainable development promotes the idea that social, environmental, and economic progresses are all attainable within the limits of our earth’s natural resources. Sustainable development approaches everything in the world as being connected through space, time and quality of life. Sustainable development constantly seeks to achieve social and economic progress in ways that will not exhaust the earth’s finite natural resources. The needs of the world today are real and immediate, yet it's necessary to develop ways to meet these needs that do not disregard the future. The capacity of our ecosystem is not limitless, meaning that future generations may not be able to meet their needs the way we are able to now. The major objectives of the sustainable development may be the following;

1. Increasing economic growth
2. Meeting the basic needs
3. Involving more of the population in development
4. Controlling population growth
5. Conserving and improving the environment
6. Changing the technology
7. Managing the risk
8. Changing international relations

5.11 Sustainable Development: Historical Markers

- 1968 - The Club of Rome
- 1972 - The release of The Limits to Growth
- 1972 - The United Nations Conference on the Human Environment
- 1984 - The World Commission on Environment and Development (Brundtland Commission)
- 1987 - The release of Our Common Future
- 1992 - The Earth Summit
- The Rio Declaration on Environment and Development
- Agenda 21
- 2002 -- The World Summit on Sustainable Development

1968 - The Club of Rome

Founded in 1968, the Club of Rome is an international non-governmental (NGO) organization devoted to the study of the "world problematique," the term it coined to describe political, social, cultural, environmental and technological problems from a global, multidisciplinary and long term perspective. It brings together scientists, researchers, business people, and heads of state from all the continents, including former president of the USSR Mikhaïl Gorbachev, and Rigoberta Menchú Tum, laureate of the 1992 Nobel Peace Prize in recognition of her work in social justice and recognition of the rights of indigenous peoples. Over the years, the Club of Rome has produced a large number of reports, including The Limits to Growth which, when first published in 1972, brought the ecological limits to economic and demographic growth to the door of world opinion.

1972 - The release of The Limits to Growth

In 1972, the Club of Rome published Limits to Growth, written at its request by a team of researchers from the Massachusetts Institute of Technology (MIT). Limits to Growth is one of the first documents of importance to be published about the ecological limits to economic and demographic growth. It exposes the results of mathematical simulations conducted on demographic and economic growth correlated with the exploitation of natural resources.

1972 - The United Nations Conference on the Human Environment

The United Nations Conference on the Human Environment took place in the summer of 1972 in Stockhom, Swedan. Probably for the first time issues of an ecological nature were added to the roster of international concerns. One of the key results of this historical meeting was the adoption by participants of a declaration of principles and action plan to fight pollution. It was further to this meeting that the United Nations Environment Program was founded. At the same time, the Club of Rome published the report Limits to Growth.

1984-The World Commission on Environment and Development (Brundtland Commission)

In 1984, the United Nations Assembly gave Gro Harlem Brundtland, then Prime Minister of Norway, the mandate to form and preside over the World Commission on Environment and Development, today recognized for having promoted the values and principles of sustainable development. The Commission's mandate was mainly to recommend means to the international community to preserve the environment through improved cooperation between developing nations and so-called developed nations, while considering existing relationships between peoples, resources, the environment and development. The purpose of the Commission's work was to draw up a profile of environmental issues and, finally, develop an action plan defining the objectives of the international community in matters pertaining to development and environmental protection. The Commission's work led to the release in 1987 of the report *Our Common Future*, also called the Brundtland Report.

1987 - The Release of Our Common Future

The work of the World Commission on Environment and Development culminated with a report entitled Our Common Future (1987), Often called the Brundtland Report after the Commission's chairman, Norwegian Gro Harlem Brundtland, the report popularized the term "sustainable development" and its definition. Our Common Future is a comprehensive program for change that exposes the links between unlimited economic growth, inconsequential use of natural resources, poverty and environmental degradation. In line with the report published by the Club of Rome in 1972, Limits to Growth, Our Common Future identifies the world-scale problems compromising the health and security of humanity and, more fundamentally, the ecological equilibrium on which life depends. The document also sets general objectives for reversing the trend. Essentially, Our Common Future confirms the ability of humanity to change the course of history by taking a different development path that this time would be sustainable.

1992 - The Earth Summit

Rio de Janeiro, Brazil, was the setting for the Earth Summit, also called the United Nations Conference for Environment and Development (UNCED). Participants had defined the key principles and established a program of action called Agenda 21 on which several sustainable development initiatives today are based. Bringing together nearly 200 government representatives and a large number of NGOs, the Earth Summit gave rise to the Rio Declaration on Environment and Development, a key document reaffirming an international commitment to the principles of sustainable development. Other texts were adopted at this meeting are:

- Convention on Biodiversity;
- Framework Convention on Climate Change (and its corollary, the Kyoto Protocol);

- Convention to Combat Desertification;
- Statement of principles on the management, conservation and sustainable development of forests.

Further to this meeting, international institutions were set up to realize the commitments made by the nations in attendance. Among these institutions, the United Nations Commission for Sustainable Development since 1992 has promoted the principles and practices associated with sustainable development at the international level.

The Rio Declaration on Environment and Development

Under The Rio Declaration the signatory countries agreed that protection of the environment and social and economic development are fundamental to reaching sustainable development. This declaration marks a significant step in the establishment of sustainable development priorities at the international level.

Agenda 21

Agenda 21 is a comprehensive plan of action for the principles set forth by the Rio Declaration on Environment and Development. Agenda 21 addresses front-line global problems, which are grouped together under 39 themes involving social and economic development, environmental protection, resource management, participation of civil society in the decision-making process and the means to implement sustainable development. Adopted by 179 nations, the program is a world class reference document.

2002 -- The World Summit on Sustainable Development

In 2002, the World Summit on Sustainable Development held in Johannesburg, South Africa, was the occasion for participants to renew their commitment to the principles defined in the Rio Declaration and the Agenda 21 objectives, and also to progress in this sense by prioritizing certain targets. These include the elimination of poverty, changes to consumption patterns and non-viable production, and the protection and management of natural resources. Participants also broached the subject of globalization and ties linking health and development issues. Of note, government representatives in attendance pledged to develop national sustainable development strategies to be implemented before 2005. Since 2002, some governments, international organizations and communities adopted and implemented the strategies, action plans and programs stemming from the directions outlined at the meeting.

5.12 Limits to Growth

In 1968, a group of about 75 persons belonging to different strata of the society from around the world formed a Club called the ‘Club of Rome’, an international non-governmental (NGO) organization devoted to the study of the “world problematique,” the term it coined to describe political, social, cultural, environmental and technological problems from a global, multidisciplinary and long term perspective. It brings together scientists, researchers, business people, and heads of state from all the continents. Over the years, the Club of Rome has produced a large number of reports, including The Limits to Growth which, published in 1972, brought the ecological limits to economic and demographic growth to the door of world opinion. Based on system dynamics computer model, to simulate the interactions of five global economic subsystems namely: population, food production, industrial production, pollution and consumption of non-renewable natural resources.

In 1972, the Club of Rome published Limits to growth written at its request by a team of researchers mainly Donella H. Meadows, Dennis L. Meadows, Jorgen Randers and William W. Behrens III from the Massachusetts Institute of Technology (MIT). The Limits to Growth is one of the first documents of importance to be published about the ecological limits to economic and demographic growth. It exposes the results of mathematical simulations conducted on demographic and economic growth correlated with the exploitation of natural resources. The report presents forecasts up to 2100.The MIT team's model was designed specifically to investigate five major trends of global concern:

1. Accelerating global industrialization;
2. Rapid world population growth;
3. Widespread malnutrition caused by poverty;
4. Dependence on non-renewable resources and their accelerated depletion;
5. Deteriorating environment.

The main conclusion drawn by the researchers was that if the growth trends in world population and industrialization continued unchanged, the model's limits to growth would be reached sometime within the following one hundred years (around 2072), with the most probable result being a rather sudden and uncontrollable decline in both population and industrial capacity to meets our needs. They proposed to replace growth with equilibrium by stabilizing economic activity and demographic growth. MIT researchers presented a development model that was no longer focused on progress defined in terms of growth—with growth understood as being the drive for infinite accumulation in a world in which resources are limited—but on the understanding of the concept of progress as an improvement of our aptitude to ensure the well-being of the human communities while being respectful of the life-sustaining ecological equilibriums.

Beyond the controversy raised by the conclusions of The Limits to Growth—conclusions that left no one indifferent—the report to this day remains one of the first thrusts toward a definition of the foundations of a development mode that we qualify today as sustainable. The Limits to Growth is a 1972 book about the computer modeling of unchecked economic and population growth with finite resource supplies. The Limits to Growth is a study about the future of our planet. On behalf of the Club of Rome, Donnella Meadows, Dennis Meadows, Jorgen Randers and their team worked on systems analysis at Jay W. Forrester's institute at MIT. Its authors were Donella H. Meadows, Dennis L. Meadows, Jorgen Randers and William W. Behrens III. In 1992, the report was revised and updated, with more refined computer simulations, and called 'Beyond The Limits' The most recent updated version was published on June 1, 2004 under the name Limits to Growth: The 30-Year Update. Donella Meadows, Jorgen Randers and Dennis L. Meadows have updated and expanded the original version. They had previously published Beyond the Limits in 1993 as a 20 year update on the original material. In 2008 Graham Turner published a paper called A Comparison of The Limits to Growth with Thirty Years of Reality. It examined the past thirty years of reality with the predictions made in 1972 and found that changes in industrial production, food production and pollution are all in line with the book's predictions of economic and societal collapse in the 21st century.

5.13 Global Warming

The term Global Warming was probably first used in its modern sense on 8 August 1975 in a science paper by Wally Broecker in the journal Science called "Are we on the brink of a pronounced global warming?" Broacher's choice of words was new and represented a significant recognition that the climate was warming. The National Academy of Sciences first used global warming in a 1979 paper called the Charney Report, which said: "if carbon dioxide continues to increase, [we find] no reason to doubt that climate changes will result and no reason to believe that these changes will be negligible." The report made a distinction between referring to surface temperature changes as global warming, while referring to other changes caused by increased CO_2 as climate change. Global warming became more widely popular after 1988 when NASA climate scientist James Hansen used the term in a testimony to Congress.

Global warming is the term used to describe a gradual increase in the average temperature of the Earth's atmosphere and its oceans, a change that is believed to be permanently changing the Earth's climate. The term "global warming" refers to the increase in the average temperature of global surface air and oceans since about 1950, and to continuing increases in those temperatures. Global warming refers to the increased temperature of Earth's surface, including land; water and near-surface air or in other words increase of Earth's average surface temperature due to effect of greenhouse gases. The scientific consensus on climatic changes related to global warming is that the average temperature of the Earth has risen between 0.4 and 0.8 °C over the past 100 years. Scientists from the Intergovernmental Panel on Climate carrying out global warming research have recently predicted that average global temperatures could increase between 1.4 and 5.8 °C by the year 2100.

The 1992 Earth Summit and the 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change attempted to address the issue of global warming, but in both cases the efforts were hindered by conflicting national economic agendas and disputes between developed and developing nations over the cost and consequences of reducing emissions of greenhouse gases.

5.14 Green House Gases and Green House effect

The major greenhouse gases that capture and stores heat are Water Vapor, which causes about 36–70% of the greenhouse effect which comes from the evaporation of water in the oceans, lakes and soil; Carbon Dioxide (CO_2), which causes 9–26%; and occurs naturally from animal respiration and from the burning of plant material (wood, paper) and of fossil fuels (gasoline, oil, natural gas, coal, etc.); Methane (CH_4), which causes 4–9%; is also created from biological activity and from the production of fossil fuels and Ozone (O_3), which causes 3–7%. Nitrous Oxide and gases like Chloro Fluoro Carbons (CFCs), Hydro Fluoro Carbons, Per Fluoro Carbons, and Sulfur Hexa Fluoride are created by agricultural and industrial processes -- these gases also contribute to the total amount of greenhouse gases in our atmosphere. Clouds also affect the radiation balance through cloud forcing similar to greenhouse gases. Major sources of greenhouse gases generated by mankind are:

1. Burning of fossil fuels, which include oil and gas, coal and natural gas.
2. Chlorofluorocarbons, commonly used in refrigeration, cooling and manufacturing applications
3. Methane, which is caused by emissions from landfills, livestock, rice farming (which uses methane-emitting bacteria), septic processes, and fertilizers.
4. Deforestation

The largest (manmade) contributor to the greenhouse effect is Carbon Dioxide Gas emissions, about 77 percent of which comes from the combustion of fossil fuels and 22 percent of which is attributed to deforestation. The largest single contributor to the rise of man-made greenhouse gases is, of course, the burning of oil and gas to power vehicles, machinery, and produce energy and warmth. The scientific community as a whole has concluded that naturally occurring greenhouse gases have remained fairly constant over the past several hundred years. Greenhouse gases directly and indirectly generated by mankind, though, have increased radically for the past 150 years, and especially in the past 60 years.

The heat caused by infrared radiation is absorbed by "greenhouse gases". Greenhouse gases effectively absorb thermal infrared radiation, emitted by the Earth’s surface, by the atmosphere itself due to the same gases, and by clouds. The greenhouse effect is the process by which absorption and emission of infrared radiation by gases in the atmosphere warm a planet’s lower atmosphere and surface. It was proposed by Joseph Fourier in 1824, discovered in 1860 by John Tyndall and was first investigated quantitatively by Svante Arrhennius in 1896. Atmospheric radiation is emitted to all sides, including downward to the Earth’s surface. Thus, greenhouse gases trap heat within the surface-troposphere system. This is called the greenhouse effect. Although greenhouse gases make up only about 1 percent of the Earth's atmosphere, they regulate our climate by trapping heat and holding it in a kind of warm-air blanket that surrounds the planet. This phenomenon is what scientists call the Greenhouse Effect. It is the ability of gasses in the atmosphere to absorb heat from the earth's surface, as a greenhouse keeps the heat within its glass walls. Without it, scientists estimate that the average temperature on Earth would be colder by approximately 30 degrees Celsius (54 degrees Fahrenheit), far too cold to sustain our current ecosystem.

5.15 Causes of Global Warming

Global warming is caused by excessive quantities of greenhouse gases emitted into Earth's near-surface atmosphere. Greenhouse gases are both man-made and occur naturally, and include a number of gases, including; carbon dioxide, methane, nitrous oxide, chlorofluorocarbons etc.

5.16 Impacts of Global Warming

Global warming is expected to have far-reaching, long-lasting and, in many cases, devastating consequences for planet Earth.

1. **Increasing Average Temperature -** One of the most immediate and obvious impacts of global warming is the increase in temperatures around the world. The average global temperature has increased by about 1.4 degrees Fahrenheit (0.8 degrees Celsius) over the past 100 years, according to the National Oceanic and Atmospheric Administration (NOAA).
2. **Rising Seas -** Melting polar ice in the Arctic and Antarctic region, coupled with melting ice sheets and glaciers across Greenland, North America, South America, Europe and Asia, are expected to raise sea levels significantly. Global Sea Levels have risen about 8 inches since 1870, according to the EPA, and the rate of increase is expected to accelerate in the coming years. If current trends continue, many coastal areas - where roughly half of the Earth's human population lives - will be inundated.

3. **Increased likelihood of extreme events-** Agricultural systems will likely be dealt a crippling blow: Though growing seasons in some areas will expand, the combined impacts of drought, severe weather, lack of snowmelt, greater number and diversity of pests, lower groundwater tables and a loss of arable land could cause severe crop failures and livestock shortages worldwide. This loss of food security might, in turn, create havoc in international food markets and could spark famines, food riots, political instability and civil unrest worldwide, droughts and fires in some areas, flooding hurricanes in other areas.

4. **Melting of the ice caps ---** loss of habitat near the poles. Polar bears are now thought to be greatly endangered by the shortening of their feeding season due to dwindling ice packs.

5. **Melting glaciers -** significant melting of old glaciers is already observed. Since 1970, the area of snow cover in the United States has steadily decreased, according to the EPA, and the average temperature of permafrost (soil that's at or below freezing temperature) has grown warmer. One of the most dramatic effects of global warming is the reduction in Arctic sea ice: In 2012, scientists saw the smallest amount of Arctic ice cover ever recorded. Most analyses project that, within a matter of years, the Arctic Sea will be completely ice-free during the summer months. Glacial retreat, too, is an obvious effect of global warming. Only 25 glaciers bigger than 25 acres are now found in Montana's Glacier National Park, where about 150 glaciers were once found, according to the U.S. Geological Survey. A similar trend is seen in glacial areas worldwide.

6. **Widespread vanishing of animal populations -** Many species of plants and animals are already moving their range northward or to higher altitudes as a result of warming temperatures, according to a report from the National Academy of Sciences. Migratory birds and insects are now arriving in their summer feeding and nesting grounds several days or weeks earlier than they did in the 20th century, following widespread habitat loss.

7. **Spread of disease -** The effect of global warming on human health is also expected to be serious. The American Medical Association has reported an increase in mosquito-borne diseases like malaria and dengue fever, as well as a rise in cases of chronic conditions like asthma are already occurring, most likely as a direct result of global warming.

8. **Bleaching of Coral Reefs due to warming seas and acidification due to carbonic acid formation -** As levels of atmospheric Carbon Dioxide (CO_2) increase, the oceans absorb some of that CO_2, which increases the acidity of seawater. Since the Industrial Revolution began in the early 1700s, the acidity of the oceans has increased about 25 percent, according to the EPA. Because acids dissolve calcium carbonate, seawater that's more acidic has a deleterious effect on organisms with shells made of calcium carbonate, such as corals, mollusks, shellfish and plankton. If current ocean acidification trends continue, coral reefs are expected to become increasingly rare in areas where they are now common. One third of coral reefs now appear to have been severely damaged by warming seas.

9. **Loss of Plankton due to warming seas ---** The enormous (900 mile long) Aleution island ecosystems of orcas (killer whales), sea lions, sea otters, sea urchins, kelp beds, and fish populations, appears to have collapsed due to loss of plankton, leading to loss of sea lions, leading orcas to eat too many sea otters, leading to urchin explosions, leading to loss of kelp beds and their associated fish populations.

5.17 Solutions to Slowing or Stopping Global Warming

Burning fossil fuels such as natural gas, coal, oil and gasoline raises the level of carbon dioxide in the atmosphere, and carbon dioxide is a major contributor to the Green House Effect and Global Warming. Here are some simple actions that can take to help reduce global warming.

1. Reduce, Reuse, Recycle

Do your part to reduce waste by choosing reusable products instead of disposables. Buying products with minimal packaging (including the economy size when that makes sense for you) will help to reduce waste. And whenever you can, recycle paper, plastic, newspaper, glass and aluminum cans. By recycling half of your household waste, you can save 2,400 pounds of carbon dioxide annually.

2. Use Less Heat and Air Conditioning

Adding insulation to your walls and attic, and installing weather stripping or caulking around doors and windows can lower your heating costs more than 25 percent, by reducing the amount of energy you need to heat and cool your home. Turn down the heat while you're sleeping at night or away during the day, and keep temperatures moderate at all times. Setting your thermostat just 2 degrees lower in winter and higher in summer could save about 2,000 pounds of carbon dioxide each year.

3. Change a Light Bulb

Wherever practical, replace regular light bulbs with compact fluorescent light (CFL) bulbs. Replacing just one 60-watt incandescent light bulb with a CFL will save you $30 over the life of the bulb. CFLs also last 10 times longer than incandescent bulbs, use two-thirds less energy, and give off 70 percent less heat.

4. Drive Less and Drive Smart

Less driving means fewer emissions. Besides saving gasoline, walking and biking are great forms of exercise. Explore your community mass transit system, and check out options for carpooling to work or school. When drive, make sure your vehicle is running efficiently it will improve mileage. Every gallon of gas you save not only helps your budget; it also keeps 20 pounds of carbon dioxide out of the atmosphere.

5. Buy Energy-Efficient Products

When it's time to buy a new car, choose one that offers good gas mileage. Home appliances now come in a range of energy-efficient models, and compact florescent bulbs are designed to provide more natural-looking light while using far less energy than standard light bulbs. Avoid products that come with excess packaging, especially molded plastic and other packaging that can't be recycled. If you reduce your household garbage by 10 percent, you can save 1,200 pounds of carbon dioxide annually.

6. Use Less Hot Water

Set your water heater at 120 degrees to save energy, and wrap it in an insulating blanket if it is more than 5 years old. Buy low-flow showerheads to save hot water and about 350 pounds of carbon dioxide yearly. Wash your clothes in warm or cold water to reduce your use of hot water and the energy required to produce it. That change alone can save at least 500 pounds of carbon dioxide annually in most households. Use the energy-saving settings on your dishwasher and let the dishes air-dry.

7. Use the "Off" Switch

Save electricity and reduce global warming by turning off lights when you leave a room, and using only as much light as you need. And remember to turn off your television, video player, stereo and computer when you're not using them. It's also a good idea to turn off the water when you're not using it. While brushing your teeth, or washing your vehicle, turn off the water until you actually need it for rinsing. You'll reduce your water bill and help to conserve a vital resource.

8. Plant a Tree

If you have the means to plant a tree, start digging. During photosynthesis, trees and other plants absorb carbon dioxide and give off oxygen. They are an integral part of the natural atmospheric exchange cycle here on Earth, but there are too few of them to fully counter the increases in carbon dioxide caused by automobile traffic, manufacturing and other human activities. A single tree will absorb approximately one ton of carbon dioxide during its lifetime.

9. Ensure the quality of your product

When you purchase certain durable electric and electronics equipments you should be take care of the efficiency of the product.

10. Encourage others to Conserve

Share information about recycling and energy conservation with your friends, neighbours and co-workers, and take opportunities to encourage public officials to establish programs and policies that are good for the environment. And less energy use means less dependence on the fossil fuels that create greenhouse gases and contribute to global warming.

11. Find other Sources of Energy

Solutions to reduce reliance on fossil fuels to produce energy and warmth include alternative energy sources such as:

1. Solar Power, which is usually generated by solar panels or a solar tower
2. Wind Power, which is usually generated by groups of wind turbines
3. Biomass Energy, which is derived from "lumber mill wastes, urban wood waste, forest and agricultural residues and other feed stocks" as well as waste from factories and landfills.
4. Geothermal Energy, which is derived from steam and hot water found deep beneath the Earths' surface.

Reference:

1. A.P. Thirlwal 'Growth and Development', Palgrave
2. Amir Kumar Bagchi - The Political Economy of Development – Orient Longman
3. Das Gupta, Monica; Chung, Woojin; Shuzhuo, Li (February 2009). "Is There an Incipient Turnaround in Asia's 'Missing Girls' Phenomenon?". World Bank Policy Research Working Paper 4846.
4. Donella Meadows et.al – Limits to Growth – the Thirty Years update- Viva Publications
5. Klasen S, Wink C. Missing women: revisiting the debate. Feminist Econ 2003;9: 263-
6. Lester R Brown – Eco Economy – Orient Long man
7. M.P. Todaro SC Smith 'Economic Development' Pearson Education
8. Oster, Emily (2005). Hepatitis B and the case of the Missing Women, Journal of Political Economy .

9. Sen A.K (20 December 1990),More than 100 Million Women are Missing New York Review of Books **37** (20).
10. Sen AK. Many faces of gender inequality. Frontline 2001; 19 November;18:4-14. www.hinduonnet.com/fline/fl1822/18220040.htm (accessed 15 Sep 2003).
11. Sen AK. Missing women. BMJ 1992;304: 586-7.
12. Subrato Ghatak 'Introduction to Development Economics' – Routledge.
13. Wallace Broecker, "Climatic Change: Are We on the Brink of a Pronounced Global Warming?" Science, vol. 189 (8 August 1975), 460–463.
14. http://www.ipcc.ch :
15. http://www.weathervane.rff.org/
16. http://www.igpp.lanl.gov