ECONOMIC DEVELOPMENT OF INDIA

Syllabus for B.A.Economics, Non-Semester (DD & CE)

UNIT I:

Salient features of Indian Economy -Natural Resources – Land, Soil, Water, Forest and Minerals – Population- Growth- Human Resources - Problem of Poverty and unemployment – Remedial Measures

UNIT II:

Agriculture: Importance of agriculture- Backwardness of Agriculture - Green Revolution – Features-Agricultural Inputs – HYV, Chemical Fertilisers and water Management- Farm Mechanization – Agricultural Finance

UNIT III:

Role of Industries to economic development, Pattern of Industrialization, Industrial Policy since 1951-Large Scale Industries- Iron & Steel - Cotton Textile -Jute- Cement- Sugar- Engineering- Small Scale Industries- MSME- Cottage Industries- Problems and Steps for progress

UNIT IV:

Transport Sector: Roadways, Railways, Waterways and Airways- Role of Infrastructure in Economic Development- Mode of Infrastructure- Role of Public sector —Performance of Public sector – Short comings of Public sector – Private sector – Role of private in India

UNIT V:

Development Banking Institutions: IFCI, ICICI, IDBI: Features - Banking and Insurance- IT industry- Structure, Growth and contribution to GDP- Information Technology Enable Services (ITES)

Reference Books:

Mishra &Puri – Economics of Development and Planning, 7th Edition, Himalaya Publishing, New Delhi

Ishwar. C. Dhingra – The Indian Economy, Twenty First Edition, Sultan Chand & Sons, New Delhi

Meier, G.M.(1995) Leading Issues in Economic Development, 6th Edition, Oxford University press, New Delhi

RuddarDatt and KPM Sundaram, Indian Economy, S.Chand, New Delhi, 2011.

Indian economy is an underdeveloped economy because almost all important features of an underdeveloped economy arc still present in Indian economy. Some of these features are discussed below:

1. Low Income:

In India GNP (Gross National Product) per capita was $1,180 in 2009 at current prices, roughly one third of the population is below the poverty line. On world scale, income inequalities between the developed and underdeveloped countries arc very large.

According to the World Hank estimates, in 2009 the average GNP per capita of the high income economies was $38,139 whereas it was $503 in low income underdeveloped countries.

2. Predominance of Agriculture:

In India agriculture and allied sectors contribute nearly 14.2 percent of Gross Domestic Product (GDP) according to the 2010-11 estimates released by the Central Statistics Office (CSO). Moreover, in India agriculture provides employment to around .50 per cent of the workforce.

The share of income in agriculture is however, considerably less than the share of employment in agriculture which clearly reflects the relatively low productivity per labour unit in the agricultural sector.

3. Rapid Population Growth Rate and High Dependency Ratio:

High population growth rate is also an indicator of underdevelopment. India's population growth rate was 1.93% per annum and 21.34 % per decade during 1991-2001, which is still very high as compared to developed economies. Dependency ratio refers to ratio of dependent population (non-working) to total population. In India dependency ratio is around 60% which is very high. This is because of high birth rate and social circumstances.

4. Mass Poverty:

According to United Nations Development Programme's (IJNDP) Global Human Development index 2011. India is ranked 134th among 187 countries. The report says 53 per cent of Indians suffer from multidimensional poverty. The Planning Commission released the second India Human Development Report (HDR) 2011.

The report claims that poverty, unemployment and child labour are declining. According to this report the absolute number of the poor (27 per cent)

stood at 302 million as compared to 320 million in 1973. Poverty is widespread in the underdeveloped countries, liven though major progress has been registered over the past 25 years, the absolute number of poor has in fact increased.

5. Unemployment and Underemployment:

Unemployment is a phenomenon of all economies whether developed or underdeveloped. But nature and degree of unemployment is different in developed and underdeveloped economies.

In developed economics most of the unemployment is cyclical which arises because of fluctuations in business cycles. In underdeveloped economies like India, chronic unemployment is found which results from the structural defects in the economy.

Moreover, underemployment is widespread in underdeveloped countries. Underemployment is a condition in which a person is getting work but not according to his/her capacity and qualifications.

The 64th round (2007-2008) of NSSO survey on employment-unemployment indicates a creation of 4 million work opportunities between 2004-05 and 2007- 08. The Eleventh Five Year Plan aims at generating 58 million work opportunities in twenty- one high growth sector.

6. Inequality:

Inequality in distribution of income and wealth is found in every country but this is wider in underdeveloped economies. In India bottom 40% of rural population possess only 5% of rural assets while 8% top households possess 46% of total rural assets. This disparity is more intensive in urban areas.

7. Scarcity of Capital:

Capital is considered as the most important factor in the development of an economy. In underdeveloped economies like India, capital availability per person is very low which results in low productivity and low per capita income. Low per capita income again results in low savings, low investment and low capital formation.

Thus Underdeveloped Countries (UDCs) are caught in the grip of vicious circle of poverty. Lack of capital does not allow an economy to introduce the latest technologies. Thus, economy becomes technologically backward and internationally in competitive.

The CSO's Quick Estimates for 2009-10 placed gross domestic savings at 33.7 per cent of the GDP at current market prices. With private-sector savings more or less static, ii was the savings of the public sector that went up from a revised level of 0.5 per cent in 2008-09 to 2.1 per cent in 2009-10. In the investment sphere the ratio of gross investment came down to around 36.5 per cent in 2009-10 from 38 per cent in 2007-08.

8. Low Level of human Development:

Human Development Index (IIDI) constructed by United Nations Development Programme (UNDP) has become an important indicator of development. IIDI is a composite index of three important parameters of development- education health and income. Every year, in Human Development Report (HDR) value of IIDI is calculated for each country and then they are ranked and classified into three categories high, medium and low human development countries. According to the UNDP Global Human Development Index (IIDI) 2011. India is ranked 134th among 187 countries.

9. Balance of Payments (Bop):

Bop is the systematic record of all economic transactions like trade of goods, trade of services, unilateral transfers, foreign investment, etc. between a country and rest of the world. Bop of a country is also an indicator of development or underdevelopment of the country. BOP of UDCs like India shows that these countries export primary (agricultural) products and raw materials and import final products and technologies from developed countries.

They invite foreign capital to fill their investment deficiency. India's Bop is generally unfavorable i.e., it faces deficit. To fill this deficit it has to borrow from other countries and international organisations like IMF, World Bank, ADB, etc. In lieu of loans, these organisations interfere in important policy matters and impose their terms and conditions.

10. Social Peculiarities:

High illiteracy rate, male dominated society, joint family system, fatalism, lack of entrepreneurship, casteism, communalism, widespread child labour, etc. are some characteristics of Indian society which distinguish it from developed societies.

Natural resources

Natural resources are generally defined as all those things given by nature on, above and under the surface of the earth. In this broad sense natural resources include land, water, forests, fisheries and animals, mineral ores and sources of energy like coal, petroleum, gas and uranium, etc.

India is rich in natural resources. Some of its important resources arc discussed below.

Land resources in India

Land resources are considered as non-renewable energy reserve. Further, they are associated with a host of several other elements such as agrarian base of rural as well as urban economy, accessibility of water, and other factors. Speedy urban expansion and the rising land usages have changed because of the increasing population growth and economic development in some selected landscapes is being observed in India. The monitoring of land use changes is essential to understand land use over different sequential or spatial time scales for successful land management.

Today, with increasing urbanisation as well as industrialisation, an increased pressure has been witnessed on land, water and other environment resources, mainly in big metropolitan cities. In order to utilise available land resources in India effectively, the country is re-organising efforts in the areas of land resource management. Thus, there has been a growth in land resource companies as well as in other service providers across the country. India occupies a land area of around 3,287,263 sq km.

There are different types of land in India, of which 54.7 % of it is civilised land. The several types of land resources in India include agricultural land, farmland, barren land, real estate land, commercial land and residential land.

Majority of the population of India are engaged in agricultural and allied activities and thus agricultural land accounts for near about 56.78 % of the total land area of the country. In India, the total cultivable area is 1,269,219 sq km. Moreover, land is also used in India for grazing and as permanent pastures.

The trend of love for nature and due to less available space in city apartments, farm land is fast becoming the best option for land resources in India. Thus, land resources in India are crucial factors dealt by the Indian government and managed effectively according to the requirements. In order to make appropriate utilisation of obtainable land resources, the nation is making efforts to manage land resources effectively. Thus, there has been an increase in the number of land resource companies and service providers.

Soils of India:

Soil is our prime natural and economic resource. Soils in India differ in composition and structure. Six Different Types of Soils Found in India are as follows:

1. Alluvial Soils:

These are formed by the deposition of sediments by rivers. They are rich in humus and very fertile. They are found in Great Northern plain, lower valleys of Narmada and Tapti and Northern Gujarat. These soils are renewed every year.

2. Black Soils:

These soils are made up of volcanic rocks and lava-flow. It is concentrated over Deccan Lava Tract which includes parts of Maharashtra, Chhattisgarh, Madhya Pradesh, Gujarat, Andhra Pradesh and Tamil Nadu. It consists of Lime, Iron, Magnesium and also Potash but lacks in Phosphorus, Nitrogen and Organic matter.

3. Red Soils:

These are derived from weathering of ancient metamorphic rocks of Deccan Plateau. Its redness is due to iron composition. When iron content is lower it is yellow or brown. They cover almost the whole of Tamil Nadu, Andhra Pradesh, Chhattisgarh, Karnataka, Maharashtra and parts of Orissa.

4. Laterite Soils:

These soils are formed due to intense leaching and are well developed on the summits of hills and uplands. They are commonly found in Kerala, Tamil Nadu, Maharashtra, Chhattisgarh and hilly areas of Orissa and Assam.

5. Mountain Soils:

These soils are formed as a result of the accumulation of organic matter derived from forest growth. They are found in Himalayan region and vary in different regions according to altitude. Tea is grown in those areas which receive sufficient rainfall.

6. Desert Soils:

In the desert regions of Rajasthan, soils are not well developed. As evaporation is in excess of rainfall, the soil has a high salt content and saline layer forms a hard crust. These soils are generally sandy and deficient in organic matter.

Water resources

Water is one of the most precious resources the earth provides to mankind. Its use in modern age is manifold. We drink water to satisfy our thirst. We use it for domestic needs, irrigation, industrial use, transportation, power production and waste disposal. Water is universal solvent.

Thanks to our nature; it is very rich in water. About three-fourth of the earth's surface is covered with water. But only a small portion of total water resources is actually available for human use. Majority, about 97.3% is present in oceans and is salty in nature. The fresh water constitutes only 2.7%. Out of this, inland" surface waters i.e. lakes, rivers, and ponds account for hardly 0.02%. This relatively negligible portion of the earth's water is crucially important to all form of terrestrial and freshwater aquatic life. Of all natural resources, water is unarguably the most essential and precious resource. Life began with water, and life is nurtured by water. There are organisms, such as anaerobes, which can survive without oxygen, but no organism can survive without water.

About 25 per cent of electricity generated in the economy is from the hydel sources. The other important use of water is in irrigation. In a country where agriculture gives sustenance to a large proportion of the population, the provision of water for irrigation can make crucial difference, i.e. it can either stimulate the economic activity or depresses it altogether.

Sources of Water:

(1) Inland water: due to rainfall and form water circulation.

(2) Ground water: Rain, snow, dew sinks into ground as underground reserves.

(3) Surface water: lakes, river, ice.

I. Drinking, cooking, washing, domestic use

II. Aqua culture and fisheries

III. Industrial use

IV. Power generation

V. Ecological conservation

VI. Recreation

Surface Water:

Surface water is found in rivers, lakes, or other surface impoundments. Surface water is naturally replenished by precipitation and naturally lost through discharge to evaporation and sub-surface seepage into the ground. Surface water is exposed to many different contaminants, such as animal wastes, pesticides, insecticides, industrial wastes, algae and many other organic materials.

Ground Water:

Ground water is water trapped beneath the ground. Rain that soaks into the ground, rivers that disappear beneath the earth and melting snow are but a few of the sources that recharge the supply of underground water.

Ground water may contain any or all of the contaminants found in surface water as well as the dissolved minerals it picks up during its long stay underground. Other sources of water, which have not yet been tapped but represent a potential source, are saline lakes, saline springs, snow and ice fields.

Rivers:

India's rivers are classified as Himalayan, peninsular, coastal and inland-drainage basin rivers.

Importance of Water

Water is used for various important purposes:

Water in Agriculture

Water plays the most important role in agriculture. Agriculture is impossible without irrigation throughout the crop season. Irrigation ensures proper plant growth.

Water for Municipal use

Lifestyle of the inhabitants and their economic conditions affect the water use within the home in different parts of the country. Municipal; demand includes water for domestic purposes, commercial uses, street washing, lawn and garden irrigation, fire protection. Water in the domestic sector is generally used for drinking, washing toilets, lawn sprinkling, and food preparation etc.

Balancing the ecosystem

Water is not only important for human beings but also plays an important role to balance the entire ecosystem by various ways:

- By its presence in the atmosphere it absorbs the Sun's heat.
- The rain water scours the hills and carries the sediments into rivers, valleys etc.
- Percolating water into rock crusts takes part in the formation of mineral deposits.
- In Polar Regions, water in the form of the caps influences climatic and geographical changes.

Water for industries

Water is used in huge quantities in the industries like steel industry, chemicals, fertilizers, textiles, cement, electricity, petrochemicals and paper. Mining, food etc. these industries require water for following or the other reasons:

- Cooling.
- Generation of power.
- Cleaning purposes.
- Fire protection.
- Air conditioning.

Water for power

Thermal power plants also require large volume of water for the purpose of cooling and disposal of fly ash. Water is used in thermal power generation.

Water for Navigation

Water ways are important medium of transportation. Transport by water ways is cheaper as compared to by road and railway. The main waterways exist in the Ganga in the eastern region and Brahmaputra in the north-eastern region, which account for more than 60 per cent of the traffic.

Water for fish, wildlife and recreation

Fish, wildlife and recreation facilities play an important role in nation's life and adequate water supplies for their continued development and important. Swimming, boating, fishing is the important outdoor recreational activities which are impossible without water.

Forest Resources in India:

In India, forests form 23 percent of the total land area. A forest is a natural, self-sustaining community characterized by vertical structure created by presence of trees. Trees are large, generally single-stemmed, woody plants. Forest can exist in many different regions under a wide range of conditions, but all true forests share these physical characteristics.

A forest is a biotic community predominantly of trees, shrubs and other woody vegetation. This invaluable renewable natural resource is beneficial to man in many ways.

The direct benefits from forests are:

(a) Fuel Wood:

Wood is used as a source of energy for cooking purpose and for keeping warm.

(b) Timber:

Wood is used for making furniture, tool-handles, railway sleepers, matches, ploughs, bridges, boats etc.

(c) Bamboos:

These are used for matting, flooring, baskets, ropes, rafts, cots etc.

(d) Food:

Fruits, leaves, roots and tubers of plants and meat of forest animals form the food of forest tribes.

(e) Shelter:

Mosses, ferns, insects, birds, reptiles, mammals and micro-organisms are provided shelter by forests.

(f) Paper:

Wood and Bamboo pulp are used for manufacturing paper (Newsprint, stationery, packing paper, sanitary paper)

(g) Rayon:

Bamboo and wood are used in the manufacture of rayon (yarns, artificial silk-fibres)

(h) Forest Products:

Tannins, gums, drugs, spices, insecticides, waxes, honey, horns, musk, ivory, hides etc. are all provided by the flora and fauna of forests.

The indirect benefits from forests are:

(a) Conservation of Soil:

Forests prevent soil erosion by binding the soil with the network of roots of the different plants and reduce the velocity of wind and rain — which are the chief agents causing erosion.

(b) Soil-improvement:

The fertility of the soil increases due to the humus which is formed by the decay of forest litter.

(c) Reduction of Atmospheric Pollution:

By using up carbon dioxide and giving off oxygen during the process of photosynthesis, forests reduce pollution and purify the environment.

(d) Control of Climate:

Transpiration of plants increases the atmospheric humidity which affects rainfall and cools the atmosphere.

(e) Control of Water flow:

In the forests, the thick layer of humus acts like a big sponge and soaks rain water preventing run-off, thereby preventing flash-floods. Humus prevents quick evaporation of water, thereby ensuring a perennial supply of water to streams, springs and wells.

Since pre-history, human beings have realized benefits from forested lands in the form of spiritual values, medicines, shelter, food, materials, fuel and more.

Human Resources of India

India is the seventh largest country in the world. Our country is blessed with many natural resources. But all these resources cannot help our country unless they are tapped, handled and used in a planned way. This can be done only by the people. Man can develop the resources only when he is wise, healthy, educated and properly trained. Thus, the real resources of our country are its people. They are our human resources.

The total population of our country is now more than 100 cores. India is the second most populous country in the world, after China. Today, every seventh man

in the world is an Indian. Our country's population is increasing at a rapid rate. It has doubled over the last 45 years. This is the creating many problems.

Three out of every four Indians live in villages. They earn their living from farming, forestry, fishing and cattle rising. People are now leaving villages and coming to cities in search of work. This is putting a great pressure on the civil amenities and other facilities in cities.

The rapid rise in our population is creating many problems such as shortage of food, clothing, housing, health, education and employment. This has affected our standard of living. We can solve this problem if we have small families. If there were fewer people, we would be able to provide enough food, houses, clothes and jobs for almost everyone.

The living conditions of the people can be improved by providing enough food, better education and health conditions. We have achieved great deal since independence, but a lot remains to be done. If we want to make our human resources useful, we will have to improve the quality of our people.

The quality of its people is more important than their number for the development and progress of the country. With improvement in the quality of our human resources, we can make better use of our natural resources. We must all work to improve our own lives and the lives of those around us.

Poverty in India

Poverty refers to a situation when people are deprived of basic necessities of life. It is often characterized by inadequacy of food, shelter and clothes. India is one of the poorest countries in the world. Many Indian people do not get two meals

a day. They do not have good houses to live in. Their children do not get proper schooling.

At present, 29.8% of the Indian population lives below the poverty line. In the category of poor falls the people whose daily income is less than 28.65 rupees (56 cents/35p) a day in cities and 22.42 rupees (44 cents/33p) a day in villages.

Tribal people, Dalits and labour class including farm workers in villages and casual workers in cities are still very poor and make the poorest class in India.

60% of the poor still reside in the states of Bihar, Jharkhand, Odisha, Madhya Pradesh, Chattisgarh, Uttar Pradesh and Uttarakhand.

India at present has a greater share of the poor around the world. Thirty years ago, India was home to one-fifth of world's poor but now it is a home to one-third of poor people. This means we now have more poor in India as compared to thirty years ago. According to 2011 poverty Development Goals Report, poverty in India is expected to drop by 22% in 2015.

Causes of Poverty in India

High population growth rate is one of major reasons of poverty in India. This further leads to high level of illiteracy, poor health care facilities and lack of access to financial resources. Also, high population growth affects the per capita income and makes per capita income even lower. Ever increasing prices of even basic commodities is another reason of poverty. A person below the poverty line finds it difficult to survive. Caste system and unequal distribution of income and resources is another reason of poverty in India.

Apart from all these, unskilled workers are paid very low in spite of hard work they put daily. The problem lies with the unorganized sector as owners do not bother the way their workers live and the amount they earn. Their area of concern is just cost-cutting and more profit. Because of the number of workers looking for a job is higher than the jobs available, unskilled workers have no other option but to work for less money. The government should really find a way to impose minimum wage standards for these workers. At the same time, the government should ensure that this is implemented well.

Causes of Poverty

1. Rapidly Rising Population:

The population during the last 45 years has increased at the rate of 2.2% per annum. On average 17 million people are added every year to its population which raises the demand for consumption goods considerably.

2. Low Productivity in Agriculture:

The level of productivity in agriculture is low due to subdivided and fragmented holdings, lack of capital, use of traditional methods of cultivation, illiteracy etc. This is the main cause of poverty in the country.

3. under Utilized Resources:

The existence of under employment and disguised unemployment of human resources and under utilization of resources has resulted in low production in agricultural sector. This brought a down fall in their standard of living.

4. Low Rate of Economic Development:

The rate of economic development in India has been below the required level. Therefore, there persists a gap between level of availability and requirements of goods and services. The net result is poverty.

6. Price Rise:

The continuous and steep price rise has added to the miseries of poor. It has benefited a few people in the society and the persons in lower income group find it difficult to get their minimum needs.

7. Unemployment:

The continuously expanding army of unemployed is another cause of poverty. The job seeker is increasing in number at a higher rate than the expansion in employment opportunities.

8. Shortage of Capital and Able Entrepreneurship:

Capital and able entrepreneurship have important role in accelerating the growth. But these are in short supply making it difficult to increase production significantly.

9. Social Factors:

The social set up is still backward and is not conducive to faster development. Laws of inheritance, caste system, traditions and customs are putting hindrances in the way of faster development and have aggravate" the problem of poverty.

10. Political Factors:

The Britishers started lopsided development in India and reduced Indian economy to a colonial state. They exploited the natural resources to suit their interests and weaken the industrial base of Indian economy. In independent India, the development plans have been guided by political interests. Hence, the planning has a failure to tackle the problems of poverty and unemployment.

Poverty alleviation programmes

After independence, the Government has launched several poverty alleviation programmes, the important among these are as follows:

1. Legal elimination of bonded labourers.

2. Preventing the centralisation of wealth by modifying the law.

3. Antyodaya plan.

4. Small Farmers Development Programme (SFDP)

5. Drought Area Development Programme (DADP)

6. Twenty point programme

7. Food for work programme

8. Minimum needs programme (MNP)

9. Integrated Rural Development Programme (IRDP)

10. National Rural Employment Programme (NREP)

11. Rural Labour Employment Guarantee Programme (RLEGP)

12. TRYSEM scheme

13. Jawahar Rojgar Yojna (JRY)

14. Swarna Jayanti Gram Swarozgar Yojna.

15. National Social Assistance Programme (NSAP)

16. Rural Housing Programme.

17. Indira A was Yojana.

18. Pradhan Mantri Rojgar Yojna.

19. Nehru Rozgar Yojna (NRY)

20. Self-Employment Programme for the Urban Poor, (SEPUP)

21. Prime Minister's Integrated Urban Poverty Eradication Programme (PMIUPEP)

Anti-Poverty Programmes Suggested by the Government of India:

The six anti-poverty programmes as suggested by the Govt. of India are as follows: 1. Integrated Rural Development Programme 2. Jawahar Rozgar Yojana/Jawahar Gram Samriddhi Yojana 3. Employment Assurance Scheme 4. Food for Work Programme 5. Sampoorna Gramin Rozgar Yojana 6. Rural Housing – Indira Awaas Yojana

1. Integrated Rural Development Programme:

The Integrated Rural Development Programme (IRDP), which was introduced in 1978-79 and universalized from 2nd October, 1980, aimed at providing assistance to the rural poor in the form of subsidy and bank credit for productive employment opportunities through successive plan periods.

In order to take care of the specific needs of the rural population, sub-programmes of IRDP such as Training for Rural Youth for Self-Employment (TRYSEM), Development of Women and Children in Rural Areas (DWCRA), Supply of Improved Toolkits to Rural Artisans (SITRA), and Ganga Kalyan Yojana (GKY) were introduced. These schemes were, however, implemented as 'stand-alone programmes', an approach, which substantially detracted from their effectiveness.

On 1st April, 1999, the IRDP and allied programmes were merged into a single programme known as Swarnajayanti Gram Swarozgar Yojana (SGSY). The SGSY emphasizes on organizing the rural poor into self-help groups, capacity-building, planning of activity clusters, infrastructure support, technology, credit and marketing linkages.

2. Jawahar Rozgar Yojana/Jawahar Gram Samriddhi Yojana:

Under the Wage Employment Programmes, the National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP) were started in sixth and seventh plans. The NREP and RLEGP were merged in April 1989, under Jawahar Rozgar Yojana (JRY). The JRY was meant to generate meaningful employment opportunities for the unemployed and underemployed in rural areas through the creation of economic infrastructure and community and social assets.

Employment generation progressively declined over the years, partly, due to lower central allocations in Ninth Plan and partly due to the increasing cost of creating employment. The JRY was revamped from 1st April, 1999, as Jawahar Gram Samriddhi Yojana (JGSY). It now became a programme for the creation of rural economic infrastructure with employment generation as the secondary objective.

3. Employment Assurance Scheme:

The Employment Assurance Scheme (EAS) was launched on 2nd October, 1993, covering 1,778 drought-prone, desert, tribal and hill area blocks. It was later extended to all the blocks in 1997-98. The EAS was designed to provide employment in the form of manual work in the lean of agricultural season. The works taken up under the programme were expected to lead to the creation of durable economic and social infrastructure and address the needs of people.

4. Food for Work Programme:

The Food for Work Programme was started in 2000-01 as a component of EAS. It was first launched in eighth drought-affected states of Chhattisgarh, Gujarat, Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Maharashtra and Uttaranchal. It aims at enhancing food security through wage employment. Food grains are supplied to states free of cost, however, the supply of food grains from the Food Corporation of India (FCI) godowns has been slow.

5. Sampoorna Gramin Rozgar Yojana:

The JGSY, EAS and Food for Work Programme were revamped and merged under the new Sampoorna Gramin Rozgar Yojana (SGRY) Scheme from 1st September, 2001. The main objective of the scheme continues to be the generation

of wage employment, creation of durable economic infrastructure in rural areas and provision of food and nutrition security for the poor.

6. Rural Housing – Indira Awaas Yojana:

The Indira Awaas Yojana (LAY) programme aims at providing free housing to Below Poverty Line (BPL) famiUes in rural areas and main targets would be the households of SC/STs. It was first merged with the Jawahar Rozgar Yojana (JRY) in 1989 and in 1996, it broke away from JRY into a separate housing scheme for the rural poor. The Ninth Plan Housing Programme under lAY was framed in the light of National Housing and Habitat Policy 1998, which aimed at providing shelter for all in rural areas by the end of the Plan period. Inspite of high allocations by the central and state governments, the housing programme under LAY has not achieved the stated objectives.

The Housing and Urban Development Corporation (HUDCO) has extended its activities to the rural areas, by providing loans at concessional rate of interests for low-income groups and economically weaker sections for the construction of houses. HUDCO's housing programme was given major importance in the Ninth Plan.

This housing programme did not cover all the states in India. Its implementation was limited to only some states such as Andhra Pradesh, Tamil Nadu, Karnataka, Kerala, Orissa and West Bengal. However, there was lukewarm response to the scheme, as the state governments prefer grant-based programmes than a loan-based one.

However, many of such programmes in the earlier Five-Year Plans have failed due to lack of planning, coordination, commitment on the part of the

government and officials in implementing them. Planning is to be done keeping in mind that poverty is not a cause but is a result. Unless the officials concerned implement all these programmes with sincerity and honest efforts, they cannot reach the poor and achieve a big success.

The amount of wealth, sources of income, social position and mode of living can measure poverty in accordance with the standards of living. The mode of living depends on the fundamental factors of food, clothing, shelter and the individual s capacity to get them. The standard of living varies from country to country.

Not only the economic factors, which determine the standard of living, but also the social and psychological factors play an influential role in the standard of living. In India, the major components to measure the standard of living are food and nutrition, clothing, housing, education, health and per capita income.

Poverty is treated as a social problem because it leads to social disorganization, disruption of harmony, money, and stability in the society. The problem of poverty cannot be solved overnight or by the efforts of a single individual. Strategical planning and effective implementation constituting for a certain period of time, which may be even decades, can remove the firmly rooted causes and condition of poverty in any society. The above efforts may be fruitful only when there is proper coordination and cooperation between the government and voluntary agencies and the public at large.

Suitable Measures:

i) **Employment opportunities:**

Poverty can be eliminated if the poor people are given the jobs according to their needs and talents. Self employment can also be provided to them. Government can set up institutions which trains them in some practices and skills.

ii) **Establishment of Small Scale Industries**

Government should develop cottage, handicrafts and other small scale industries to in the backward regions of our country. Moreover this will transfer resources from the areas of surplus to the deficit solving the problem of urbanization.

iii) **Education**

Government should take steps to spread awareness for education so that the people do not have to depend on others for their income. They can also protect themselves from exploitation by the greedy traders.

iv) **Reduce Inflation**

Inflation tends to make poor poorer and rich richer. There should be a stability in the price level of the country. Government should also reduce the burden of tax on the poor and charge more on the richer class. Rationing should be promoted so that the poor people get the basic necessities if life at lower price level.

v) **Check Population growth**

Much of the problem of poverty can be solved if the population of the country can be reduced to a average level. This will make developmental plans successful and the poor people will have a greater share in the funds of the government.

vi) **Proper Utilization of Resources**

Resources of the country should be utilized properly so that we can have the benefits of those free gifts of nature.

vii) **Uplift of Agriculture**

Agriculture is the backbone of our country. It provides income to vast number of people. Hence the government should also concentrate on it and not only on the industries.

Problems and Solutions to Unemployment in India:

Unemployment is serious problem that our government faces. Our leaders are trying their utmost best to solve it wisely. If it is not solved sooner, a social revolution may take plea to have its solution. The main cause of unemployment is the repaid growth of populations. Since independence the populations of India has increased by threes times its total. When people multiply, there raises the problems of unemployment and it becomes difficult for government to provide employment to a sufficient number of people. As a matter of principle it becomes the duty of government to provide employment to all as far as possible and we are blessed that our government is taking keen interest to solve this series problem of today. As the growth of populations is going unchecked, jobs and services in a given field commonly remains insufficient. When our youths do not find employment despite their best efforts, they get irritated and feel disappointed.

Unemployment means a person willing to work but unable to find a qualified job. Our country is facing many problems but one of the serious problem is of unemployment. Many graduates, doctors, engineers, scientist are unemployed or working underemployed. Due to unemployment we are wasting our country's human resource.

The unemployed rate in between age group 15- 29 has been increased since 2009-2010. According to the Global Employment Trends 2014 the unemployment rate has raised to 3.8%, last year it was 3.7%. The**International Labour Organisation** (ILO) has said in the recent report that India has shown rise in the unemployment in the last two years.

If the problem of unemployment is solved it will help in development of the country. With Population of **1.20 billion** in our country the unemployment rate is increasing day by day. The problem of unemployment is rising but still many industries are facing the problem of skilled candidate for their company. There is a boom of software companies, Outsourcing companies in India, but still facing the problem of unemployment.

Here are some of the **reasons** why there is unemployment in India

1. There are employment opportunities in India, but the rising population problem creates the unemployment. If the population grows in the same rate the next generation will face more problems of unemployment. If there is vacancy for 1 position 100 or 1000 apply for the position and only one gets the job and others remain unemployed.
2. Inflation
3. Indians don't take jobs which are below their grades. Many find it difficult to work at the below qualification level job.
4. Low wages or salary below the market rate.
5. Many big industries look for the skilled candidate only, for their company.
6. Recession
7. Many Employers give preference to the experienced candidates only and not the fresher.

8. Not enough or new jobs: As per the experience & analysis from **Get Sarkai Naukri**, number of new government jobs is decreasing every year. Government is not able to create enough jobs keeping in mind the Indian population.
9. Slow business expansion
10. Advanced Technology: Earlier for a task hundreds or thousand people were required to do a work but now due to the advanced technology only one person can do many people's work. With the advanced technology companies are hiring few persons to operate the machine. Give a command on computer and the work is done this has cut off the employment of many.
11. Corruption: In Government sector and in some private sector people get the job by giving the bribe. Even though the candidate is not that qualified but if he gives the bribe he gets the job. So to get a government job give a bribe.The qualified candidate remains unemployed as no money to give the bribe.

Problems caused due to unemployment

- Unemployment and poverty goes side by side. The problem of unemployment gives rise to the problem of poverty.
- Young people after a long time of unemployment find the wrong way to earn money.
- To get rid from the unemployment stress, they accept alcohol or drugs.
- Unemployed youths accepts suicide as the last option of their life
- Lower economic growth
- Increase rate in Crimes. As the employed youth don't have anything to do they start doing robbery, murder etc.
- Health issues i.e it affects mentally as well as physically

Solutions to the unemployment in India

1. The very first solution for the unemployment is to control the rising population of our country. Government should motivate people to have small families. Indian government has started initiatives to control the population but still the population is rising.

2. The quality of Indian education should be improved. The current education system is not upto the level. Government should keep a strict watch on the education system and try to implement new ways to generate skilled labour force. Government should select a committee to look after the schools and universities. The syllabus taught is of no use to the industries so the education should be as per the current requirements of the industries. Before completing the education a practical knowledge should be given.

3. Also today's youth should join the institute or select the course where proper training is given and the course is as per the current industries requirements. Take the course as per your interest and which will bright your future.

4. Government should encourage and develop the agriculture based industries in rural areas so that the rural candidates don't migrate to the urban areas. More employment should be generated in rural areas for the seasonal unemployment people.

5. Rapid Industrialization should be created.

6. Development of the rural areas will stop the migration of the rural people to the urban cities and this will not put more pressure on the urban city jobs.

7. Government should allow more foreign companies to open their unit in India, so that more employment opportunities will be available.

ROLE OF AGRICULTURE IN A MODERN ECONOMY

INTRODUCTION:

An economy may be divided into a number of sectors according to the type of output produced. Three major sectors namely, primary (agriculture), secondary (manufacturing), and tertiary (transport and services) sectors are distinguished. The structure of an economy may then be defined by shares of these sectors in total output, total employment, total trade ,total inter industry inputs used in the production etc. . Over time the structure of an economy surely changes as the economic activities expand. Obviously economic development is characterized by structural changes. Structural shifts and changing shares of different sectors in macro aggregates like total output and inter-industry input uses go hand in hand. From the development experiences of the developed economies it has been observed that there is a definite relationship between economic development and structural changes of an economy (Kuznet). As the economy is on the development path, the structure of the economy shifts away from agriculture to industry and then from industry to services.

The process of agricultural production gets transformed with the spread of mechanization and modernization: agriculture becomes more modernized as traditional inputs are substituted by modern inputs like fertilizers, pesticides and bio-technologically engineered seeds and becomes more mechanized as agricultural implements like tractor, harvester, and pumps for irrigation are used in place of ploughs driven by bullocks, hand-lifted water for irrigation. As a consequence, the crop pattern as well as the cropping intensity in agriculture undergoes substantial changes.

Agricultural productivity and production both rise. Side by side transformation of agriculture brings about changes in its demand for manufacturing outputs as inputs like fertilizer, pesticides, petroleum products, machineries and implements. The input supplying industries in turn get stimulated to produce more to meet the increasing demand for their products.

Agriculture is the major occupation in India. For increasing the economy, modern techniques are introduced by using new farming equipment and technology. India is a way ahead in the production of agricultural products.

India is known as the ‘Land of Agriculture’ which has many traditions and even a large variety of cultures. Approximately 75% of the Indian population is connected with agriculture and its related activities. India ranks first in the production of sugarcane and second in the production of rice in the world. Apart from these, many other cereals, tea, coffee etc. add to the agricultural output from India. Spices are also well known worldwide from the incredible India.

New Modern Agricultural Techniques:

Modern India implements new techniques in agriculture to increase the quantity and quality of the yield. Many agricultural products are exported on large basis worldwide which add to the economy of India. New modern farm machinery and financial schemes are provided by the government to encourage agriculture in the rural areas of the nation.

Agriculture has always been a major occupation of the population and hence it has a major contribution to the economy of the nation. The variety of soils has been a plus point which has made production of a variety of grains and spices possible.

Even though India is considered as a less developing nation, it is a major exporter of various products which are not available in various parts of the globe. Basically, India is a step ahead in agricultural production which has served the globe since ages. Government is continuously aiding the poor farmers by providing finance and encouraging them through new schemes.

Salient features of Indian Agriculture:

Agriculture is the backbone of India's economy; it provides direct employment to about 65 percent of working people in the country, contributes nearly 29 percent of Gross Domestic Product and accountants for a sizable share of total value of the country's exports. It forms the basis of many premier industries of

India including the cotton textiles, jute and sugar industries. being the largest source of employment and income to the millions of people, it provides a vast market for our industrial products. It is because of this paramount significance of agriculture in India's economy that this sector has been, and continuous to be, accorded a pride of place in India's plan for economy development. However, in spite of all the efforts, agriculture continues to remain, by and large, undeveloped and backward. Some of the main features of agriculture in India are as follows:

Stagnation and low productivity:

Agricultural stagnation has been a ban of British rule in India. The Britishers never made any serious effort to develop the agrarian economy of India. They only brought about some reorganization in this field mainly to meet the raw material requirements of their own industry. And further under the growing pressure of population on the one hand and lack of investment on the other, Indian agriculture started showing distinct signs of decay. Productivity in Indian agriculture is among the lowest in the world and the pattern of land use, the organization of farming, the tools and implements used are all outmoded thereby persisting stagnation in this sector.

Uneconomic land holdings:

Land holdings in India agriculture are very small and uneconomic. continued process of subdivision and fragmentation have made the land holding ridiculously small, in many cases, unfit for cultivation. And those holdings upon which cultivation is carried on, do not provide enough income to the farmers even to meet their basic minimum requirements. In 1990-91; there were about 105.3 million operational holding in the country of which 76.6 million were below two hectare each. OF these as many as 50.5 million holdings over (56 percent) had an area of

less than one hectare. The average size of the land holding is so small (less than 0.4 hectares) that it is uneconomic for cultivation. Between 1985-86 and 1990-91, the operationals land holdings had increased by 8.1 million or 8.3 percent. Operational area, on other hand, rose only marginally by 0.6 percent; indicating clearly the pressure of population in land.

Subsistence nature of agriculture:

Since over three-fourth of of operational holdings are small and uneconomic and productivity in agriculture is extremely low, the Indian farmer takes to farming more as a way of life rather than any commercial or profitable activity. The tiny farms in agriculture are in the nature of subsistence farms because the meager because the major production is hardly sufficient for self consumption of the cultivators. There is no scope for commercialization or profit oriented production in a large segment of Indian agriculture.

Gamble in monsoon:

Indian agriculture is aptly described as a gamble in monsoon in spite of continued expansion in irrigation potential, nearly 68 percent of area under cultivation is still dependent on rainfall which is uncertain, erratic and confined to about four months in a year. Any year of bad rains spells disaster to agriculture and bring misery to millions of people and engaged in dry farming areas. Lack of assured irrigation deters and agricultural production and restrict the possibility of double or multiple cropping.

Unemployment and poverty:

Low productivity and lack of necessary inputs perpetuate the backwardness of agriculture which falls to accommodate the mounting pressure of population on its weak infrastructure. Consequently there is widespread unemployment in this

sector which is estimated to be of the order of 20 millions persons. Due to lack of farm farm inputs and in the absence of progressive farm practices, cultivators do not operate their farms intensively and this result in employments on the farms. Furthermore, in India most of the farms are in the nature of family farms where family is a unit of ownership and employment. Therefore, almost every member of the family is associated in varying degrees with production in the farms and the farm work by its nature is is Such that the entire system and technique of production adapt themselves to the abundance of farm workers. The naturally results in disguised unemployment and about 25 percent of agricultural work force in India falls under this category.

Causes of Backwardness of Agriculture in India

There are many factors responsible for low agricultural productivity (backwardness of agriculture) which has been summarized below:

1. Small Size of Holdings:

The agricultural productivity is low due to small size of holdings. Indeed small size of the farm fails to provide profitable employment to the farmers. In our country average size of holdings is 1.8 hectares while in developed countries like U.S.A. it is 122 hectares.

Apart from this, subdivision and fragmentation of holdings is another obstacle in the way of low agricultural productivity. In this small size of holdings the scientific cultivation with latest techniques is almost impossible.

2. Vicious Circle of Poverty:

To a greater extent, the vicious circle of poverty is also responsible for the poor performance of agriculture. The vicious circle of poverty takes the following form in agricultural sector:

The crucial deficiencies in Indian agriculture relate to land, capital and management, etc. which in turn hampers the agricultural productivity.

3. Indebtedness:

Another reason for low agricultural productivity is the indebtedness of the farmers. To perform the social ceremonies a farmer has to borrow from moneylender at a very high rate of interest.

Unproductive borrowings do not add to his income and he always remains under debt. Consequently, the farmer fails to avail incentives to improve the agricultural production.

4. Inadequate Irrigation Facilities:

Indian farmer is almost dependent on climatic conditions for irrigation. Monsoons are irregular. Only a few farmers avail the facilities of irrigation from various sources such as canals, tube wells, etc.

Moreover these facilities are found in some areas and where these are available, they are not fully utilized. The result is that the produce is of bad quality and results in low productivity.

5. Lack of Adequate Finance:

Availability of finance is the basis of every industry. The supply of finance is inadequate in case of Indian agriculture. Money is required for short period as well as for long period in order to improve the agricultural production.

According to All India Rural Credit Survey Committee, in 1950-51 more than 90 per cent of the total agricultural credit was advanced by the moneylenders. The co-operative societies accounted for about 3 per cent respectively.

6. No Scientific Methods of Cultivation:

The ignorance and conservation of Indian farmer also results in the poor performance of agriculture. They do not know the importance of modern technology. Still, seeds are sown by wooden ploughs. Poor quality of seeds yields poor quantity of crops.

7. Lack of Marketing Facilities:

The defective marketing system also poses difficulties to the farmers. The farmers do not get a due reward from the sale of his produce. The middleman takes away portion of their profits. Unless farmers are guaranteed fair and remunerative prices there is little inducement for agricultural output to increase.

Indian marketing has no facilities of godowns and warehousing where the cultivators may keep their produce for a better price. Moreover, they lack transportation facilities. This results in low price of the produce.

8. Agricultural Research:

Undoubtedly, a huge amount of money is spent on agricultural research; still the fruits do not reach to the poor cultivators. There is a lack of co-ordination between laboratory and the farm.

9. Lack of Productive Investment:

Investment in jewelry, trade and money lending seems to be more attractive. Therefore, there is less investment in land improvement. In the absence of productive investment in agriculture, there is little scope for expanding production.

10. Social Factors:

In our country, poor performance of agriculture is also found due to the operation of various socio economic factors. Illiteracy, ignorance, superstition and conservative outlook stands in the way of the adoption of modern technology.

As such, farmers are against the use of bone manure and chemical fertilizer. Besides, they are prejudiced against killing of monkeys and rats at the farm.

11. Natural Calamities:

Another reason of low productivity of Indian agriculture is that crops worth crores of rupees are destroyed every year due to floods and other natural calamities. The soil erosion has been regarded as creeping death of the farm.

12. Poor Livestock:

The quality of livestock is very inferior and they are thin and feeble. On account of their poor quality, they are needed in more quantity which adds

unnecessary burden on the poor cultivators. Malnutrition is another cause for the degeneration of cattle in our country. As a result, they suffer from one disease or the other.

13.Land Policy and Legislation:

The piece-meal character of land reform policy and its legislation is greatly, responsible for the backwardness of agriculture. Excessive reliance on the administrative machinery has adversely affected agricultural development, unnecessary delay in implementation and uncertainty about the rights on land has tended to diminish land productivity.

Green revolution:

Green revolution refers to the development and use of such HYV seeds during the decade of I960 which led to phenomenal increase in the output of food crops. The term was first used by the American scientist Dr. William Gadd. In India the green revolution denotes a positive change in agriculture brought about by the substitution of traditional techniques and methods of cultivation by modern ones.

Swaminathan is known as "Indian Father of Green Revolution" for his leadership and success in introducing and further developing high-yielding varieties of wheat in India.

Green Revolution, also known as the New Agricultural Strategy, marks a significant phase in the history of development of agricultural technology. It represents a paradigm shift in the agents1 players and priorities of agricultural technology development.

States and regions vary with regard to the nature and extend of the Green Revolution package. It depended on factors like the size of operational holdings, the availability of water, innovative nature of farmers, policy of the government etc.

However, the term "Green Revolution" is applied to the period from 1967 to 1978 and even into today. Between 1947 and 1967, efforts at achieving food self-sufficiency were not entirely successful. Efforts until 1967 largely concentrated on expanding the farming areas. But starvation deaths were still being reported in the newspapers. In a perfect case of Malthusian economics, population was growing at a much faster rate than food production. This called for drastic action to increase yield. The action came in the form of the Green Revolution.

The term "Green Revolution" is a general one that is applied to successful agricultural experiments in many Third World countries. It is NOT specific to India . But it was perhaps most successful in India .

There were three basic elements in the method of the Green Revolution:

1) Continued expansion of farming areas;

2) Double-cropping existing farmland;

3) Using seeds with improved genetics.

Continued expansion of farming areas :

As mentioned above, the area of land under cultivation was being increased right from 1947. But this was not enough in meeting with rising demand. Other methods were required. Yet, the expansion of cultivable land also had to continue. So, the Green Revolution continued with this quantitative expansion of farmlands. However, this is NOT the most striking feature of the Revolution.

Double-cropping existing farmland:

Double-cropping was a primary feature of the Green Revolution. Instead of one crop season per year, the decision was made to have two crop seasons per year. The one-season-per-year practice was based on the fact that there is only natural monsoon per year. This was correct. So, there had to be two "monsoons" per year. One would be the natural monsoon and the other an artificial 'monsoon.'

The artificial monsoon came in the form of huge irrigation facilities. Dams were built to arrest large volumes of natural monsoon water which were earlier being wasted. Simple irrigation techniques were also adopted.

Using seeds with superior genetics :

This was the scientific aspect of the Green Revolution. The Indian Council for Agricultural Research (which was established by the British in 1929 but was not known to have done any significant research) was re-organized in 1965 and then again in 1973. It developed new strains of high yield value (HYV) seeds, mainly wheat and rice but also millet and corn. The most noteworthy HYV seed was the K68 variety for wheat. The credit for developing this strain goes to Dr. M.P. Singh who is also regarded as the hero of India 's Green revolution.

Statistical Results of the Green Revolution :

1) The Green Revolution resulted in a record grain output of 131 million tons in 1978-79. This established India as one of the world's biggest agricultural producers. No other country in the world, which attempted the Green Revolution recorded such level of success. India also became an exporter of food grains around that time.

2) Yield per unit of farmland improved by more than 30 per cent between 1947 (when India gained political independence) and 1979 when the Green Revolution was considered to have delivered its goods.

3) The crop area under HYV varieties grew from seven per cent to 22 per cent of the total cultivated area during the 10 years of the Green Revolution. More than 70 per cent of the wheat crop area, 35 per cent of the rice crop area and 20 per cent of the millet and corn crop area, used the HYV seeds.

Economic results of the Green Revolution:

1) Crop areas under high-yield varieties needed more water, more fertilizer, more pesticides, fungicides and certain other chemicals. This spurred the growth of the local manufacturing sector. Such industrial growth created new jobs and contributed to the country's GDP.

2) The increase in irrigation created need for new dams to harness monsoon water. The water stored was used to create hydroelectric power. This in turn boosted industrial growth, created jobs and improved the quality of life of the people in villages.

3) India paid back all loans it had taken from the World Bank and its affiliates for the purpose of the Green Revolution. This improved India 's creditworthiness in the eyes of the lending agencies.

4) Some developed countries, especially Canada , which were facing a shortage in agricultural labor, were so impressed by the results of India 's Green Revolution that they asked the Indian government to supply them with farmers experienced in the methods of the Green Revolution. Many farmers from Punjab and Haryana states in northern India were thus sent to Canada where they settled (That's why Canada today has many Punjabi-speaking citizens of Indian origin).

These people remitted part of their incomes to their relatives in India . This not only helped the relatives but also added, albeit modestly, to India 's foreign exchange earnings.

Sociological results of the Green Revolution:

The Green Revolution created plenty of jobs not only for agricultural workers but also industrial workers by the creation of lateral facilities such as factories and hydro-electric power stations as explained above.

Political results of the Green Revolution :

1) India transformed itself from a starving nation to an exporter of food. This earned admiration for India in the comity of nations, especially in the Third World .

2) The Green Revolution was one factor that made Mrs Indira Gandhi (1917-84) and her party, the Indian National Congress, a very powerful political force in India (*it would however be wrong to say that it was the only reason*).

Limitations of the Green Revolution :

1) Even today, India 's agricultural output sometimes falls short of demand. The Green Revolution, howsoever impressive, has thus NOT succeeded in making India totally and permanently self-sufficient in food. In 1979 and 1987, India faced severe drought conditions due to poor monsoon; this raised questions about the whether the Green Revolution was really a long-term achievement. In 1998, India had to import onions. Last year, India imported sugar.

However, in today's globalized economic scenario, 100 per cent self-sufficiency is not considered as vital a target as it was when the world political climate was more dangerous due to the Cold War.

2) India has failed to extend the concept of high-yield value seeds to all crops or all regions. In terms of crops, it remains largely confined to foodgrains only, not to all kinds of agricultural produce. In regional terms, only Punjab and Haryana states showed the best results of the Green Revolution. The eastern plains of the River

In India the HYV Programme began in 1966- 67 with the introduction of new fertilizer-responsive dwarf wheat's developed in Mexico. At first a group of agricultural scientists belonging to Ford Foundation was invited in 1959 which submitted its report in April 1959 to improve the conditions of the Indian agriculture. Consequently the Intensive Agricultural District Programme (IADP) was initiated in seven selected districts of the country (West Godavari in Andhra Pradesh, Shahabad in Bihar, and Raipur in Madhya Pradesh. Thanjavur in Tamilnadu, Ludhiana in Punjab, Pali in Rajasthan and Aligarh in Uttar Pradesh) in 1960-61.

In India the green revolution began in Punjab, Haryana and western Uttar Pradesh with the use of HYV seeds in wheat cultivation. But by 1983 it also included rice cultivation and extended its domain to Bihar, Andhra Pradesh and Tamil Nadu. Under the impact of green revolution the production of wheat increased.

After wheat the effect of green revolution was seen in the cultivation of rice crop. When compared with the wheat crop very well prove that green revolution has not been as effective over rice crop as in case of wheat.

The impact of Green Revolution on the Indian agriculture may be summarised in following words.

1. The Green Revolution led to the development of intensive agriculture production system which accelerated agricultural production and paved the way for self sufficiency in respect of food grains.

2. Green Revolution enabled Indian agriculture to change from subsistent to commercial and market-oriented.

3. The adoption of new technology under Green Revolution has created more employment opportunity in the agriculture.

4. Green Revolution has strengthened the relationship between agriculture and industry. Consequently back linkages have also become active along with forward linkages.

5. The Green Revolution has enabled farmers to obtain increasing returns from agriculture by greater utilization of agricultural inputs.

6. Green Revolution has encouraged higher adoption of agricultural innovations by the farmers.

7. Green Revolution has increased rural prosperity. It is bound to have secondary and tertiary impact over rural economic and social system.

Besides these advantages the Green Revolution also has some negative aspects also which are briefly described below:

1. Green Revolution may pave way for capitalistic farming in the country. It needs higher investment in agriculture which is beyond the reach of the small and marginal farmers. Its gains are restricted to big farmers (8.5%). The study of Green Revolution in Punjab by Ashok Rudra, Majid and Talib has proved that Green Revolution has been more successful in farmers who have big land holdings. Fransov Frank well (USAID) has also drawn similar conclusion.

2. Green Revolution has increased the economic disparity amongst the farmers. According to Dr. V.K.R.V. Rao the so called Green Revolution has widened the economic disparity amongst the rural folk. Many small farmers have been compelled to sell out their holdings and there has been increase in socio-economic tensions.

3. The new strategy has highlighted the necessity of institutional reforms in the Indian agriculture.

4. It has created three kinds of conflicts in rural areas, namely: between large and small farmers, between owners and tenant farmers and between employers and employees on agricultural farms.

5. The mechanization accompanied with Green Revolution has created large scale labour displacement and problem of unemployment in rural areas. Uma K. Srivastava, Robert W. Crown and E.O. Heady are of opinion that while biological (seed- fertilizers) innovations are labour absorbing, the mechanical innovations are labour saving. Hence premature mechanization in surplus labour economies, such as India's will aggravate the problem of rural unemployment.

6. Recent studies have proved that agricultural production in Green Revolution areas has either remained stationary or has shown declining trend. The indiscriminate and unscientific use of ground water resources and application of chemical fertilizers and insecticides have led to environmental crisis in such areas. The gradual loss of soil fertility, increasing alkalinity and salinity, water logging, depletion of ground-water resources, decreasing bio diversity, chemical poisoning of soils, surface water, plants and food stuffs are some of the emerging problems in the areas characterized by Green Revolution.

7. The impact of Green Revolution is limited to a few food crops like wheat, rice, maize, and bajra only leaving out pulses, oil seeds, cash crops and fodder crops, its gains are limited to a selected region of the country, i.e. Punjab, Haryana,

western Uttar Pradesh and some selected districts of Andhra Pradesh, Maharashtra and Tamil Nadu. This is yet to gain popularity in other parts of the country. Also it has benefitted only big land holders which constitute only 1% of the Indian peasantry and has also helped in the concentration of rural wealth.

8. Describing the waning effects of Green Revolution Lester Brown and Halken in their book {Full House) have predicted that by the year 2030 A.D. India will have to import about 40 million tons of food grains annually which would be four times of the import of 1966.

9. The application of new technology under Green Revolution in large farms has led to the substitution of human labour with mechanical processes. The greatest sufferer would be landless labourers. This may increase rural unemployment, and lead to urban migration, crowding of cities, slum formation and socio-economic tension.

Agricultural Input Management:

Some of the important components of the green revolution in India are as follows:

1. High Yielding Varieties (HYV) of seeds.

2. Irrigation (a) surface and (b) ground

3. Use of fertilizers (chemical).

4. Use of Insecticides and Pesticides.

It must be noted that majority of the components do not act in isolation, rather they are closely inter-related and heavily dependent upon one another. For example, HYV seeds are highly responsive to use of fertilizers and are equally

vulnerable to pest attacks and growth of useless weeds. Their full potential cannot be developed without the requisite supply of water.

The shorter maturing period enables the farmers to obtain more than one crop in a year from the same piece of land. This would require hastening of the harvesting operations so that land is quickly prepared for the second crop.

This will require mechanisation of farming. In order to make optimum use of the farm inputs, the farmer must know the why, where, what, when and how much of each for which there is ample scope.

1. High Yielding Varieties (HYV) of seeds:

According to R.N. Chopra, "The high yielding variety seeds are major input of agricultural production under the Green Revolution technology. Their main characteristic is increased responsiveness to chemical fertilizers, their period of maturing is short, it helps double cropping; their short stems can easily carry fertilizer load, resist wind damage, their large leaf surface helps the process of photosynthesis."

According to Sunil Kumar Munsi, The H^{1}* V seeds were perhaps the single most important input in the Indian Green Revolution. All other inputs were linked with HYV." M.S. Swaminathan has remarked that apart from erasing the 'begging bowl' image of our country, the most important gain has been the saving of forests and land, thanks to the productivity improvement associated with high yielding varieties.

The development of HYV seeds of wheat in 1960s and those of rice in 1969-70 laid the foundation for Green Revolution in India. Bandhu Das Sen has rightly remarked that they play the role of modernisers of agriculture like engines of

change, capable of transforming a traditional farmer into a commercial producer. They act as part of steam engine (for industrial revolution) to ignite an agrarian revolution in poor countries.

Thus the HYV programme brought about a major change—a transformation affecting almost every aspect of Indian agriculture. In words of Dantwala, "widespread adoption of HYVs has helped to step up cereal production, stimulated investment and substantially increased the use of modem inputs."

The Pearson Commission Report hailed it as one of the authentic marvels of our time. It's most important effect was to be seen in the attainment of self-sufficiency in cereals, which enabled us to have a break from the snip-to-mouth situation and move forward ahead of population.

National Seeds Corporation (NSC) was established in 1963. It undertakes the production of breeder seeds on its own farms and foundation and certified/quality seeds through contract growers, agricultural universities, state seeds corporations and state farms corporation of India.

Certified seed is t e ultimate stage in seed production chain and is the progeny of foundation seed. National Seeds Programme was launched in 1977 in collaboration with World Bank covering 9 states of Punjab, aryana, U.P., Bihar, Orissa, Maharashtra, Karnataka, Andhra Pradesh and Rajasthan. The production' distribution and utilization of quality seeds has been increasing since the beginning of Green Revolution.

2. Irrigation:

Irrigation is the second most important component of Green Revolution technology after HYV seeds. Assured and regular supply of sufficient water to

crops not only adds to production it also assures stability in production. Indian rainfall being unreliable, irregular and seasonal, there is urgent need to expand irrigation potential to meet the requirements of the Green Revolution strategy Irrigation is a precondition for successful introduction of HYV seeds even in areas of heavy rainfall.

The success m use of HYV seeds lies in availability of water at the right time and in the right quantity tor which B.B. Vohra had laid more emphasis on ground water rather than on surface water. The ground water gives the advantage of push-button irrigation, made possible by a pump set or a tube well and is completely under farmer's own control.

Appreciating the role of ground water in the success of Green Revolution, Vohra has preferred to call it the Ground Water Revolution. However, there is senous threat of depletion of ground water due to over-exploitation when the rate of drawal of ground water is higher than the rate at which it is replenished. In many districts of Haryana and Punjab the ground water exploitation is very high.

3. Use of Fertilizers (Chemical):

The use of chemical fertilizers has been the third most important input of Green Revolution after HYV seeds and irrigation; rather the three are tied together. In tact use of HYV seeds needs heavy dose of irrigation and fertilizers to give high yields.

Since the entire culturable land has already been brought under plough and there is practically no scope for ringing any new areas under cultivation, further increase in food-grains production can be achieved only by multiple-cropping

which heavily leans on the trio of the basic inputs, viz. HYV seeds irrigation and chemical fertilizers.

Generally the use of chemical fertilizers is made according to the soil properties. Soil testing is very essential to know the nutrient status of the soil. As a normal practice, it is suggested that NPK (Nitrogen, Phosphorus, Potasium) should be used in the ratio of 4: 2: 1 but it depends upon the quality and requirement of the soil and differs from place to place.

To encourage balanced fertilizer use and make fertilizers available to farmers at affordable prices, t e Central Government determines and notifies the selling price of urea as well as decontrolled P&K fertilizers. The current selling prices of urea and P&K fertilizers are less than the cost of production the difference between the selling price and the cost of production as assessed by the Government is' borne as subsidy.

Although the use of fertilizers has considerably increased over the years, this increase is more prominent in areas where Green Revolution has shown its impact. In 1970, southern India was leading in consumption of fertilizers, but later on northern India, particularly, Punjab, followed by Haryana and Uttar Pradesh, became the main consumers.

In the decade between 1971-72 to 1981-82, consumption in Punjab increased by about three times from 2, 90,000 tonnes to 8, 20,000 tonnes. In Uttar Pradesh, the biggest consumer because of its large size, the increase in the same period was less than 3 times.

The regional variations come in sharp focus when we look at the per hectare consumption of fertilizers. The national average consumption was 89.8 kg per

hectare in 2003-04. Majority of the states have consumption much below this average.

But it is very high in north-western states of Punjab (184.1 kg), Haryana (167.1 kg), Andhra Pradesh (136.8 kg), Manipur (130.5 kg), Uttar Pradesh (126.7 kg), West Bengal (122.4 kg) and Tamil Nadu (112.5 kg). It was quite low in Rajasthan, Orissa and Madhya Pradesh, apart from the majority of states in the North-Eastern region (Table 23.3).

In spite of the fact that India is the fourth largest consumer of chemical fertilizers in the world, after the USA, Russia and China, per hectare consumption still remains low compared to the world averages. This means that there is still large scope for using chemical fertilizers, increasing the yields and converting the dreams of Green Revolution into reality.

4. Use of Insecticides and Pesticides:

Though intensive use of irrigation and fertilizers under the Green Revolution technology has increased the farm production, it has also given birth to the problem of pests, insects, weeds, rodents, etc. The monoculture promoted by the Green Revolution technology is more vulnerable to the insects and pests.

These pets, weeds and diseases are to be checked by proper doses of insecticides, pesticides and weedicides surveillance should be an integral crop production. The first of Agriculture (1983-84), over million hectares of cropped area in the country is affected by various pests and diseases, taking an annual toll of 5 to 25 per cent of the agricultural production.

There has been a tremendous increase in the use of different types of biocides and in the area under plant protection. The regional distribution makes it

clear that areas with Green Revolution technology are the main consumers of pesticides. For example, Punjab, Haryana, Andhra Pradesh and Tamil Nadu consumed over 55 per cent of the country's pesticides in 2003-04.

Farm Mechanization: -

Farm mechanization means the use of machines and technology in the agriculture sector. The use of tractor, tube-wells and plant protection measures are included in the farm mechanization. So in the farm mechanization the use of machinery is greater as compared to the labour.

Importance or Advantages of Farm Mechanization: -

In underdeveloped countries the per acre yield is low because our farmer is not using the machines and technology in the agricultural operation. Keeping in view the performance of farm mechanization, So most of developing countries has decided to provide loans to the farmers for the purchase of tractors and tube-wells. Its importance can be judged by the following facts :

1. Increase in the Cultivable Area :-

The use of machines like tractor and bulldozers will enable the farmers to bring more areas under cultivation. A large area of barren land can be cultivated more easily.

2. Irrigation Facility: -

In poor countries the canal irrigation facilities are inadequate. The installation of more tube-wells will relieve the cultivators from uncertainty of water supply which will increase the production.

3. Transportation Facility: -

Tractor and Trolly is also used for transferring the agriculture product from

one place to another. A huge amount of product is wasted due to non-availability of transport.

4. Reduction of Cost: -

The use of machinery decreased the cost of production and due to this income of the farmer increases. It also improves the quality of production.

5. Saving of Time: -

The use of machinery saves the time of the farmers which can be utilized for other purpose. Many acre lands can be cultivated with tractor in few hours.

6. Increase in Efficiency: -

The use of machinery increases the efficiency of the worker and rises the out put per worker. So the income and efficiency of workers improves.

7. Water-logging Solution: -

In poor countries every year thousands acre land is destroyed by the water logging. We can remove the water-logging through installation of tube-wells.

8. No Dependence Upon Animal Power: -

The use of machinery reduces the dependence upon animal power which is costly and slow. There is always a fear of animal death when it is over burden.

9. Relief to Farmer: -

The use of machinery has relieved the farmer from hard work and has increased the production of agriculture sector. Before the use of machinery ploughing and thrashing was a hard job.

<u>Disadvantages of Farm Mechanization:-</u>

1. Increase in Unemployment: -

In the poor countries the rate of unemployment is already high. So the use of machinery in agriculture has increased the rate of unemployment in the country. It is useful in those countries where labour is not available or labour is costly.

2. Not Suitable for Small Holding: -

The use of machinery is not profitable for small holdings. The majority of the farmers in underdeveloped countries is the owner of small holdings. For instance, owner of a 5 acre land cannot purchase tractor.

3. Costly Machinery: -

In the poor countries farmer is unable to purchase the expensive machinery due to poverty. While labour is cheap in the poor country. Costly machinery increases the cost of production.

4. Lack of Technical Knowledge: -

In the underdeveloped countries majority of farmers are uneducated and they cannot handle the machines. So misuse of machinery causes a great loss to the farmer.

5. Lack of Foreign Exchange: -

Foreign exchange is required to make payments for imported machinery. There is a shortage of foreign exchange in poor countries. So it becomes difficult to import the machinery.

6. Preparing Facilities: -

In most of developing countries maintenance and repairing facilities are not available in the rural areas. The breakdown of the machinery will cause delay in agricultural operation.

7. Lack of Energy Resources: -

Oil, Gas, and Electricity are the main source of energy. These are essential for the farm mechanization but there is shortage of these resources in the most of underdeveloped countries. Prices of oil are increasing day by day.

8. Lack of Capital: -

In the developing countries farmers are very poor and they are unable to purchase the tractor and heavy machinery.

9. Lack of Credit Facilities: -

In the poor countries, the credit facilities are inadequate so the farm mechanization cannot be adopted.

Keeping in view the above facts we conclude that farm mechanization increases the agriculture productivity. It increases the income, saving and investment of the farmers. In the other word we can say that farm mechanization is very useful for the development of agriculture sector. Now in the today modern world every country has also realized importance of farm mechanization and has encouraged the import of machinery. Most of countries providing loans on low rate of interest to the farmers.

Agricultural Finance:

Agricultural finance needs of the farmers can be examined from two different angles:

(i) On the basis of time and

(ii) On the basis of purpose.

On the Basis of Time:

The needs of the farmers can be classified into three categories on the basis of time:

(i) Short term.

(ii) Medium term, and

(iii) Long term.

Short-term loans are required for the purchase of seeds, fertilizers, pesticides, feeds on fodder of livestock, marketing of agricultural produce,

payment of wages of hired labour are classified according to the use and kind of application as insecticides, fungicides, herbicides and other pesticides.

Insecticides account for the major share of pesticides consumption in India that includes both preventive treatments, which are applied before infestation levels are known, a implementation treatments which are based on monitored infestation levels and expected crop damages. The use of pesticides in Indian agriculture was negligible in early 1950s with only 100 tones of pesticides being consumed at the beginning of the first adoption of the new agriculture strategy in mid-1960.

The use of pesticides increased considerably as the new varieties are more prone to attack by pests am insects. The pesticides application in 1970-71 stood at about 24.3 thousand tones. Consumption of pesticides (technical grade material) stood at 41 thousand tones for unproductive purposes.

Period of such loans are up to 15 months. Agencies for granting such loans a the moneylenders and cooperative societies. Medium-term loans are obtained for the purchase of cattle, small agricultural implements, repair and construction of wells etc. The period of such loans extends from 15 months to 5 years. These loans are generally provided by money-lenders, relatives of farmers, cooperative societies and commercial banks.

Long-term loans are required for effecting] permanent improvement on land, digging tube wells,' purchase of larger agriculture implements and' machinery like tractors, harvesters etc. and repayment; of old debts. The period of such loans extends beyond; 5 years. Such loans are normally taken from Primary Cooperative Agricultural and Rural Development Banks (PCARDBS).

On the Basis of Purpose:

Agricultural credit needs of the farmers can be classified on the basis of purpose into the following categories:

(i) Productive:

(ii) Consumption needs and;

(iii) Unproductive.

(i) Under productive needs we can include all credit requirements which directly affect agricultural productivity. Farmers need loans for the purchase of seeds, fertilizers, manures, agricultural implements, livestock, digging and repair of wells and tube wells, payment of wage, effecting permanent improvements on land, marketing of agricultural produce, etc. Repayment of these loans is generally not difficult because the very process of production generally creates the withdrawal for repayments.

(ii) Farmers often require loans for consumption as well. Institutional credit agencies do not provide loan for consumption purpose. Therefore farmers stretch their hand towards the moneylenders.

(iii) Loans are taken for unproductive purposes such as litigation, marriages, social ceremonies on birth and death of a family member, religious functions, festivals etc. Farmers take loans from Mahajans since institutional credit agencies do not give such loans.

Sources of Agricultural Finance:

This can be divided into two categories:

(i) Non-institutional sources.

(ii) Institutional sources

(i) Non-Institutional sources are the following:

(a) Moneylenders

(b) Relatives

(c) Traders

(d) Commission agents

(e) Landlords

(ii) Institutional sources:

(a) Cooperatives

(b) Scheduled Commercial Banks

(c) Regional Rural Banks (RRBs)

(a) Co operatives:

(i) Primary Agricultural Cooperative Societies (PACSs) provide short and medium term loans.

(ii) PCARDBs provide long term loan for agriculture.

(b) Commercial banks, including RRBs, provide both short and medium term loans for agriculture and allied activities.

The National Bank for Agriculture and Rural Development (NABARD) is the apex institution at the national level for agriculture credit and provides assistance to the agenciesmentioned above. The Reserve Bank of India plays a

crucial role in this sphere by giving overall direction to rural credit and financial support to NABARD for its operations.

At the time of Independence the most important source of agricultural credit were the moneylenders. In 1951 (the year when planning was initiated in the country) moneylenders accounted for as much as 71.6 per cent of rural credit. This was because there was no other source or from where the farmers could borrow money.

Hence the moneylenders exploited the poor farmers. Thus, they used to charge exorbitant interest for their loans. The moneylenders used to manipulate their accounts and force the farmers to sell their produce to them at low price. The government has therefore undertaken various steps to regulate the activities of the moneylenders.

The most important move was to free the agriculturists from the clutches of the money lenders and the expansion of institutional credit to agriculture.

The Government has helped the cooperatives in a number of ways to expand their operations:

I. 14 major commercial banks were nationalised in 1969.

II. 6 more banks were nationalised in 1980.

III. In 1975 an institution was established by the government to meet the requirements of rural credit – Regional Rural Bank (RRBs).

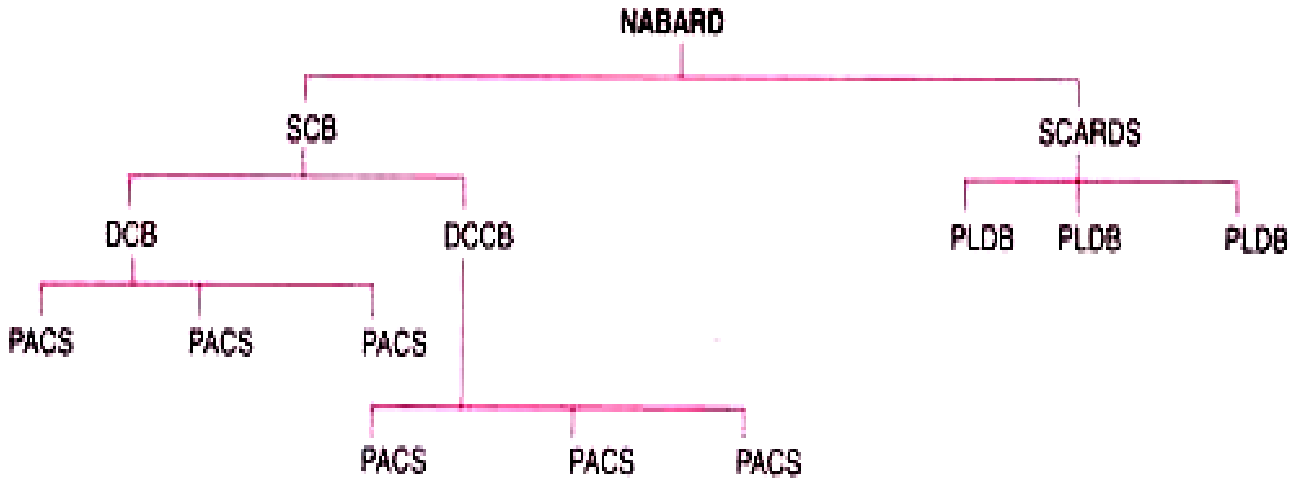
IV. In July 1982 National Bank for Agriculture and Rural Development (NABARD) was set up.

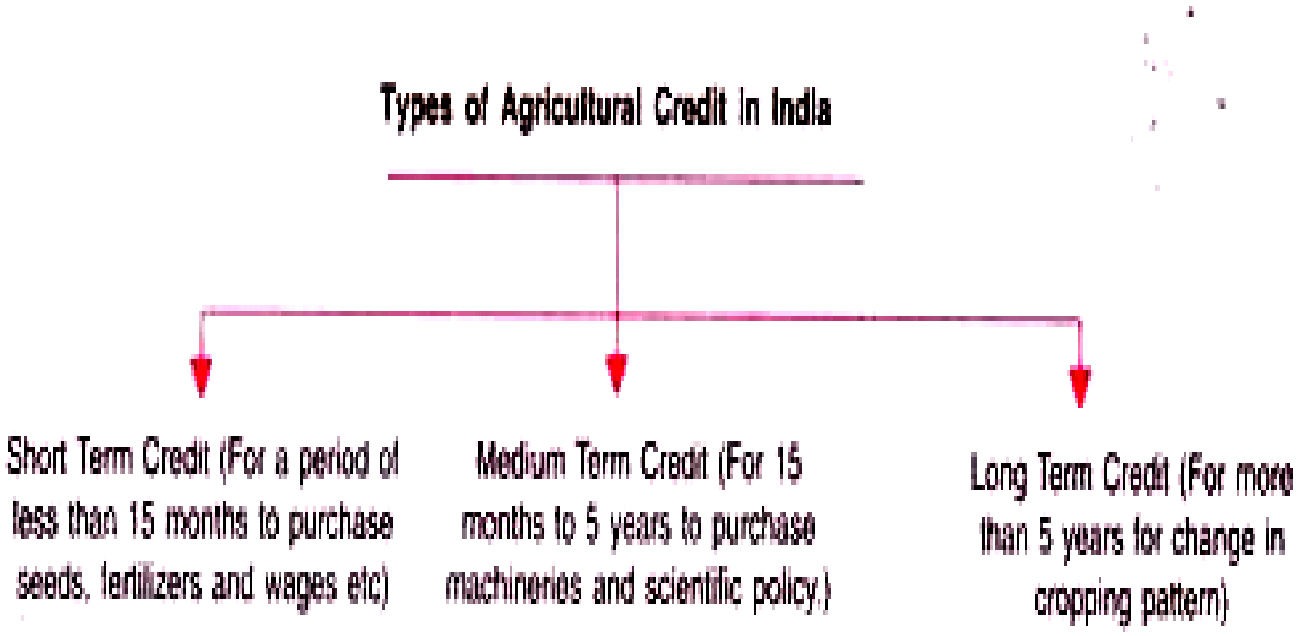
V. India now has a wide network of rural finance institution (RFI).

As a result of this massive expansion of RFIs their participation in rural credit has increased significantly while that of moneylenders has declined. Non-institutional sources of agriculture credit still remain and they offer credit at high rates of interest specially in case of unproductive purposes.

i. NABARD provides re-finance facilities to SCB, SCARDB, PACS, is PLDBs etc.

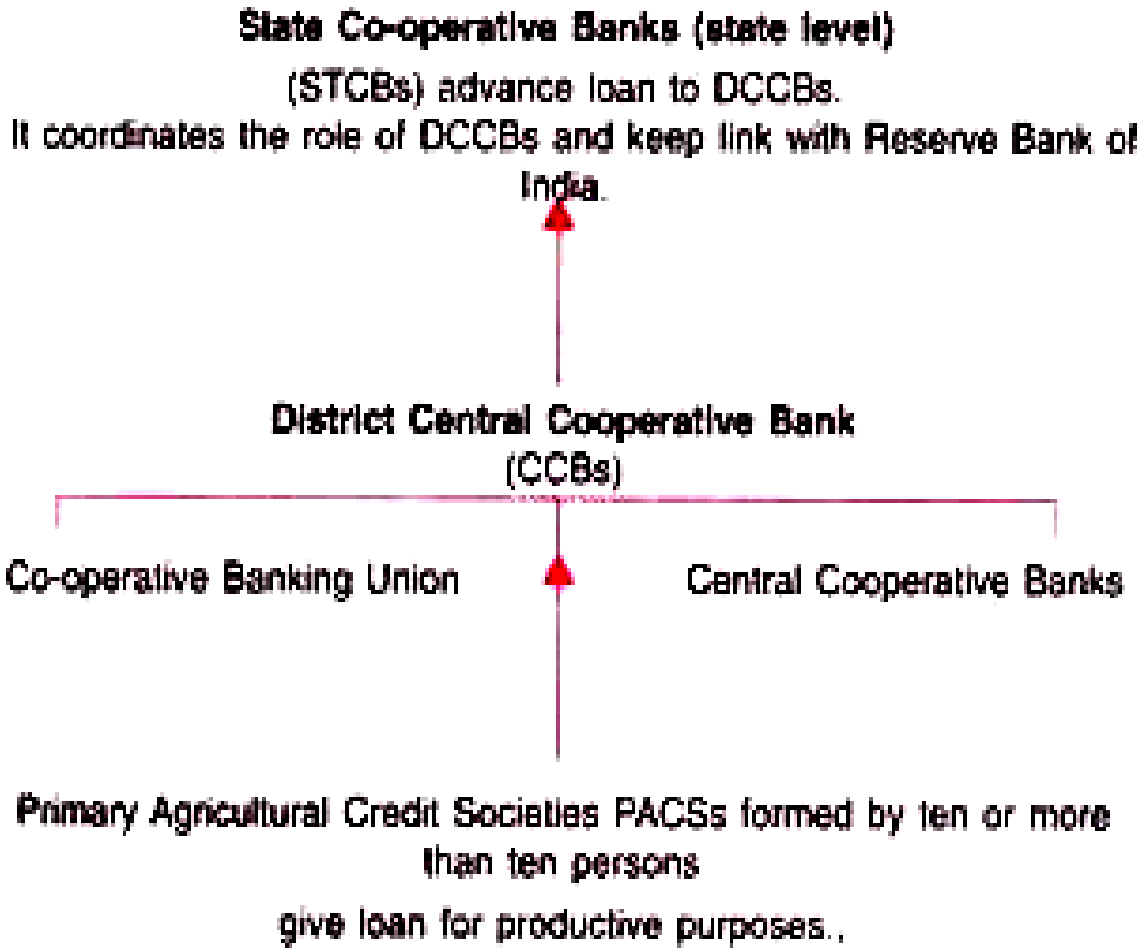
The flow of fund from NABARD to all of then-shown in the flow chart below:





Cooperative Credit Societies:

The rural co-operative credit institutions in India have been organised into short-term and long-term structures. The short-term co-operative structure is based on three-tier structures, except the states in the northeast region. At the lowest tier are the Primary Agricultural Credit Societies (PACSs). These are organised at the village level. At the second tier and District Central Cooperative Banks (DCCBs) organised at the district level. At the third and uppermost tier are the State Co-operative Banks (STCBs) organised at the state level state Co-operative Banks (state level).



To cater to long-term loans long-term credit cooperatives have been set up.

These are organised at two levels and categorized into four types:

(i) The unitary structure in which Stat Cooperative Agricultural and Rural Development Banks (SCARDBs) operate at the state level.

(ii) The federal structure in which Primary Cooperative Agricultural and Rural Developments Banks (PCARDBs) operate as independent units at the primary level and federate themselves into SCARDBS at the state level.

(iii) The mixed structure wherein both the unitary and federal types operate in one form or another.

(iv) The integrated structure where no separate Agricultural and rural development banks exist and the long-term credit business is undertaken by the long-term section of the StCBs concerned.

Commercial Banks:

In fact up to 1970 the government policy was to depend entirely on the cooperative banks as a major source of institutional credit in rural areas. Government felt that Cooperative Bank alone cannot meet the growing demand. Therefore Govt, policy changed and a number of institutions were developed to give rural credit. In 1969, 14 major banks were nationalised.

In 1980, six more banks were nationalised. In 2004, the number of total branches had shot up to 67062, of this 32,200 in rural areas. Despite the achievement of the commercial banks in the field of rural creditmentioned above, their performance and operations have invited a lot of criticism.

Regional Rural Banks:

The Working Group on Rural Banks (1975) recommended the establishment of Regional Rural Bank (RRBs) to supplement the efforts of the commercial banks and the cooperatives in extending credit to weaker sections of the rural community, small and marginal farmers, landless labourers, artisan and other rural residents of small means.

The intention in having these new banks was that there should, in the Indian context, be an institutional device which combined the local feel and familiarity with the rural problems which the cooperatives possessed and the degree of

business organisation and modernised outlook which the commercial banks had, with a view to reaching the rural poor more extensively.

Consequent upon the recommendations of the Working Group, 5 RRBs were initially set up in 1975. Their number later rose to 196. In 2003-04, RRBs provided Rs. 7,581 crores as credit to the agricultural sector. This was 8.7% of total institutional credit to agriculture in that year.

National Bank for Agriculture and Rural Development (NABARD):

The most important development in the field of rural credit has been the setting up of the National Bank for Agriculture and Rural Development (NABARD) in July 1982. It took over from Reserve Bank of India all the functions that the latter performed in the field of rural credit. NABARD is now the open bank for rural credit.

Functions of NABARD (1982):

The main functions of NABARD are as follows:

(1) It works as an open body to look after the credit requirement of the rural sector.

(2) It has authority to oversee the functioning of 'the cooperative sector through its Agricultural Credit Department.

(3) It provides short-term credit (up to 18 months) to State Cooperative Banks for seasonal agricultural operation (crop loans), marketing of crops, purchase and distribution of fertilizers and working capital requirements of cooperative sugar factories.

(4) It provides medium-term credit (18 months to 7 years) to State Co-operative Banks and RRBs for agricultural purposes purchase of shares of processing

societies and conversion of short- term crop loans into medium term loans in areas affected by natural calamities.

(5) It provides medium and long-term credit (not exceeding 25 years) for investment in agriculture under schematic lending to State Cooperative Banks, Land Development Banks, RRBs and commercial banks.

(6) It provides long-term assistance in the form of loans to state governments (not exceeding 20 years) for contribution to share capital of cooperative credit institutions.

(7) It has been entrusted with the responsibility of inspecting District and State Cooperative Banks and RRBs. The inspection of State Land Development Banks and other Federation Cooperative are undertaken on a voluntary basis.

(8) It maintains a research and development fund to be used to promote research in agriculture and rural development so that projects and programmes can be formulated and designed to suit the requirement of different areas.

NABARD and Rural Credit:

It is an apex institution in the field of rural credit. Therefore it does not deal directly with farmers and other rural people. It grants credit to them through the cooperative banks, commercial banks, RRBs.

(1) NABARD provides two types of refinance. The first is extended to RRBs, and apex institutions, namely StCBs and State governments. The other type of refinance is extended to augment resources for ground level deployment of rural credit.

During 2000-04, the NABARD's refinance policy on short term SAO (Seasonal Agricultural Operations) for co-operative banks and RRBs laid emphasis on augmentation of the ground level credit flow through adoption of region-specific strategies and rationalisation of lending policies and procedure.

(2) Rural Infrastructure Development Fund (RIDF) was established in 1995-96 with a corpus of Rs 2000 crore with the major objective of providing funds to state governments and state- owned corporations to enable them to complete various types of rural infrastructure projects.

Loans under RIDF are given for various purposes like irrigation projects, watershed management, construction of rural roads and bridges etc.

(3) The access to credit for the poor from conventional banking is often constrained by lack of collaterals, information asymmetry and high transaction cost associated with small borrowed accounts. Micro finance has emerged as a liable alternative to reach the hitherto reached for their social and economic empowerment through social and financial intermediation, it involves provision of thrift, credit and other financial services and products of very small amounts to the poor for enabling them to raise their income levels and thereby improve living standards.

In operational terms, micro credit involves small loans, up to Rs 25,000, extended to the poor without any collateral for undertaking self-employment project. Such loans are provided through Micro Finance Institutions (MFIs). One of the most popular models of MFI has been the Grameen Bank model, developed originally in Bangladesh and replicated in various parts of the world. Under this

model, Non-Government Organisations (NGOs) form and develop self- help groups (SHGs) and provide credit to them.

(4) Kissan Credit Scheme was established in 1998- 99 to facilitate short-term credit to farmers.

(5) Credit Monitoring Arrangement is established with a view to providing to operative banks with more freedom and discretion to operate in an increasingly liberalised and competitive banking environment. NABARD, start in consultation with the Reserve Bank, decided to start the Credit Authorisation Scheme (CAS) with the Credit Monitoring Arrangement (CMA) with effect from the year 2000-2001.

(6) Cooperative Development Fund (CDF) was set up in 1993 with the objective of strengthening the cooperative credit institutions in the areas of organisational structure, human resource development, resource mobilisation, recovery position etc. The assistance is provided to StCBs/SCARDBs/ CCBs)/PCARDBs by way of grant or loan or both.

It can be revealed from the above table that among all the different non-institutional sources the contribution of moneylenders was highest and that was to the extent of 69.7%. However, its contribution gradually came down to 49.2% in 1961-62 and then to 7% in 1996. Total contribution of non-institutional source towards agricultural credit has gradually declined from 92.7% in 1951-52 to 25% in 1996.

The share of institutional sources to the total agricultural credit which was 7.3% in 1951-52 gradually increased' to 18.7% in 1961-62 and then to 75% in 1996. Out of these institutional sources cooperatives contributed 40% and

commercial banks contributed 30% of the total farm credit in 1996. Although the share of non- institutional sources in the rural areas decreased but still remained very important in supplying credit to the farmers.

The most important development in the field of rural credit is. the setting up of NABARD in July, 1982. This is an apex bank which coordinates the functioning of different financial institutions working for the expansion of the rural credit. It is run by a Board of Directors headed by a chairman.

So far as the supply of credit to agriculture and to rural industries is concerned, this bank performs all the functions including short, medium and long-term refinancing that were previously performed by the Reserve Bank of India. The paid up capital of NABARD is wholly subscribed by the Central Government and the RBI.

The NABARD played an important role in solving the problem of rural indebtedness in India. This aspect would be clear if we study the functions of NABARD, and the overall impact of all activities on Indian agriculture.

Industry in the Indian Economy

Industries play an important role in the economic development of any nation .without industries, economic development is impossible. Again, in a backward and developing economy like INDIA, industries are indispensable.

Development of industries is not only indispensable for India, but there is also good scope for the development of industries in our country. India has many favourable factors for the development of industries. The various favourable factors present in the country for the development of industries are**:**

- The country is rich in natural resources, such as minerals, forests, fisheries, etc. required for the development of industries.
- The country is rich in commercial crops, such as sugar-cane, raw cotton, raw jute, tobacco, oil seeds, etc. required for the development of agro-based industries.
- The country is fairly rich in power resources, such as coal, hydro-electricity, atomic energy, etc. required for turning the wheels of industries.
- India is rich in human resources. As such, cheap labour required for the development of industries is also available in the country.
- As the country has vast population, wide market required for the development of industries is also available in the country.

Industries offer several benefits to the country: They are:

1. When there is development of industries in the country, there will be the investment of large capital, use of modern machineries, high degree of specialisation and large-scale operations. As a result, there will be greater productivity and higher national income. Higher national income, in turn, will contribute to increase in per capital income. Thus, development of industries

will contribute to the growth of national and in per capital income in the country.

2. Industrialisation creates more and varied employment opportunities and thereby, reduces the problem of unemployment and under-employment in the country. Further it can absorb the surplus agricultural labour, and thereby, reduce the problem of disguised unemployment in rural areas. Again it can contribute to the development of cottage and small industries in rural areas.
3. Industries will promote agricultural development in the country in many ways. First, with the development of agro-based industries (i.e. industries based agriculture), such as sugar-cane, raw cotton, raw jute, tobacco, oil seeds etc. there will be more demand for these materials. This, in turn will encourage the development of agriculture.
4. Industries will contribute to the development of tertiary sector, i.e. trade, transport & communication , banking insurance, etc.
5. Development of industries will be helpful in maintaining a proper balance between agriculture, industry and the tertiary sector, which is essential for the all-round economic progress of any nation.
6. Development of industries will contribute to the expansion of existing industrial areas and growth of new industrial areas.
7. Agriculture in India is not stable, as it is largely dependent on the vagaries of monsoons. On the other hand, industries are relativity more stable.
8. Industrialisation contributes to better utilisation of natural resources like minerals, forests, fisheries, etc. which the country has in abundance
9. Industrialisation will contribute to the expansion of the markets for agricultural crops, minerals, forest products etc. Further, industrialisation will contribute to the expansion of the markets for capital goods or producer goods like plant & machinery.

10. Industries contribute to increase in the income and purchasing power of the people. Further, they make available to the people a wide variety of goods for consumption.
11. Industries are indispensable for national defence. Arms and ammunitions, ships, aircrafts, tankers, etc.

Role of Industrialization

There is no second opinion to say that industrialization is an effort of finding solution to the problem of poverty, insecurity, over population and ending backwardness. However, its role is explained as under:

1. Leading Sector to Economic Growth:

industrialization is considered crucial to development strategy as it lifts our stagnation. It brings forth both backward and forward linkage effort.

The success of western countries followed by Asian countries, Japan is the standing instance of what industrialization can do to a nation.

2. Gainful Employment Opportunities:

No wonder, industrial development can greatly increase gainful employment opportunities especially in less developed countries. Generally, these countries are characterized by the existence of surplus labour. Thus, it opens avenues for employing the surplus labour.

3. Raising Productivity:

The modern industry can directly or indirectly help to raise productivity of the economy. This is due to better organization and technology. Moreover, it is accompanied by the expansion of tertiary sector.

4. Development of Agricultural Sector:

In fact, agricultural and industry are the two arms of an economy. Both are interdependent and the development of one sector promotes the other.

The interdependence relates to (i) supply of raw material and inputs from agriculture to industry and vice versa (ii) supply of wage goods to industrial sector (Hi) the supply of materials for building up economic and social overheads in the agricultural sector and (iv) the supply of basic consumption goods to the agricultural population.

5. Useful for Foreign Trade:

The nature of foreign trade also undergoes a change with industrialization of the country. It has been noticed that foreign trade of less developed countries is dominated by primary products but industrial development may lead to a change in the composition and direction of foreign trade.

This is clear from the fact that India witnessed a spectacular increase in non-traditional items of export on account of industrial development.

6. Higher National Income and Per Capita Income:

As there is proper utilization of natural resources with the adoption of latest and modern techniques of production. It leads to higher national income and per capita

income, increased employment and greater production which further leads to national prosperity.

7. Capital Formation:

Industrialization promotes capital formation that is crucial catalyst of economic prosperity. Truly, industrial development brings in good profit and more income which in turn leads to greater saving and investment. One of the reasons of Japan's industrialization is that it ranks first as far as capital formation is concerned.

8. Sign of Higher Standard of Living and Social Change:

A country cannot produce goods and services of high quality in order to attain decent living standard without the progress of industrial sector. In other words, industrialization has been regarded as a vital instrument for eradicating poverty and misery of poor lots.

9. Useful for Defense:

Industrial development is also helpful for the defense of a country. The more an industrialized country, more arms and ammunition it produces and thus, strengthens its defense.

10. Specialization and Division of Labour:

Industrialization involves specialization and division of labour. In fact, specialization is based on the application of modern technology. Therefore, industrialization results in all round progress of the country.

After independence, need for a new, well planned and clear industrial policy was felt. To meet this need, four industrial policies consisting Industrial Policies of 1948, 1956, 1977, 1980 and 1991 have been formulated. But we small discuss only the policies of 1956, 1991.

Large scale industries:

Large scale industry is often referred to as an industry that produces on a large scale in order to obtain more capital. In India, industries with a fixed asset of more than one hundred million rupees are called large scale industries. These could be manufacturing units or others which use both indigenous and imported technologies. They cater to both the local and foreign markets. Examples of large scale industries include fertilizer, cement, natural gas, coal, metal extraction, metal processing, petroleum, natural gas, mining, electrical, petrochemical, food processing units, tourism, banking, sugar, construction, automobile, communication equipment, cement, chemicals, earth movers, consumer durables (like television, refrigerators, etc), engineering products, vehicle assembly, beverages, gas and water; other fuels, agricultural processing, insurance and finance. With the opening up of the market and globalization, the effects on such industries has been mixed, some have gained by attracting foreign customers, foreign trade and technology, tie-ups, while others have lost out due to their inability to cope up with the open market competition.

Large scale industries are industries with huge infrastructure man power and heavy capital of more than rupees ten crores. Industries play a vital role in shaping the economy of a country.

Indian large scale industries have been divided into **four** groups

- Basic Industries
- Capital Goods Industries

- Intermediate Goods Industries
- Consumer Goods Industries.

Basic Industries

The basic industries provide necessary inputs to agriculture and industries. Example the steel, iron, coal, chemical fertilizers, aluminum and electricity.

Capital Goods Industries

The capital goods industries produce machines, mechanical instruments, tractors and trucks for agriculture and industries.

Intermediate Goods Industries

The Intermediate Goods Industries produce goods which are used for the production of other goods. Some of these are tyres and mobile oil for the automobile industry.

Consumer Goods Industries

The Consumer Goods Industries are the industries that produce goods for consumption such as sugar, paper, Cloth, etc.

Importance of Large Scale Industries:

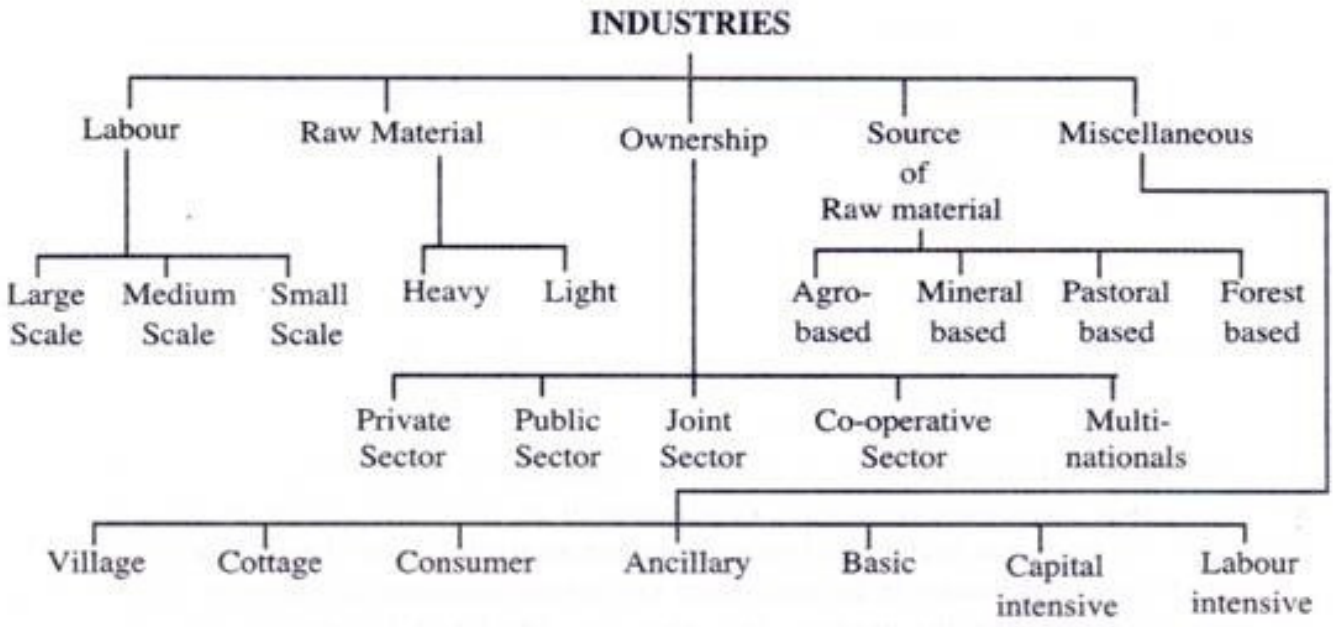
- Large scale industries are important for the industrialisation of any country.
- They produce both capital and basic goods like machines, instruments, steel, iron and chemicals.
- They can provide infrastructure such as railways, electricity and communication that are essential for economic development
- Only these industries can generate the money required for research to develop new technology. This investment is critical for industrialisation.
- Large industries have large scales of production that help in lowering the cost of goods.
- Here the capital per unit is high. Lower prices increase demand which triggers more production.

- It opens up opportunities for small and cottage industries and this leads to industrialisation of the country.
- These industries set up both new and export-oriented industries which facilitates earning of foreign exchange.
- Large scale industries help in establishing Ancillary Industries in a big way.
- Goods like spare parts, electrical goods, rubber products are produced in ancillary units to cater to the needs of large industries.

Though India ranks 10th among industrialised nations, industrial development has been very slow.

Classification of Industries in India:

Industries can be classified into several groups. The following table gives an understanding about them.



On the Basis of Strength of Labour:

1. Large Scale Industry:

Industries which employ a large number of labourers in each unit are called large-scale industries. Cotton or jute textile industries are large scale industries.

2. Medium Scale Industries:

The industries which employ neither very large nor very small number of labourers are put in the category of medium scale industries. Cycle industry, radio and television industries are some examples of medium scale industries.

3. Small Scale Industries:

Industries which are owned and run by individuals and which employ a small number of labourers are called small scale industries.

II. On the Basis of Raw-Material and Finished Goods:

Industries classified on the basis of raw materials and finished goods are:

1. Heavy Industries:

Industries which use heavy and bulky raw-materials and produce products of the same category are called heavy industries. Iron and steel industry presents a good example of heavy industries.

2. Light Industries:

The light industries use light raw-materials and produce light finished products. Electric fans, sewing machines are light industries.

III. On the basis of Ownership:

Since the start of the planned development of Indian economy in 1951, industries are divided in the following four classes:

1. Private Sector Industries:

Industries owned by individuals or firms such as Bajaj Auto or TISCO situated at Jamshedpur are called private sector industries.

2. Public Sector Industries:

Industries owned by the state and its agencies like Bharat Heavy Electricals Ltd., or Bhilai Steel Plant or Durgapur Steel Plant are public sector industries.

3. Joint Sector Industries: Industries owned jointly by the private firms and the state or its agencies such as Gujarat Alkalies Ltd., or Oil India Ltd. fall in the group of joint sector industries.

4. Co-operative Sector Industries:

Industries owned and run co-operatively by a group of people who are generally producers of raw materials of the given industry such as a sugar mill owned and run by farmers are called co-operative sector industries.

IV. On the Basis of Source of Raw Material:

On the basis of source of raw materials, industries are classified as under:

1. Agro Based Industries:

Agro based industries are those industries which obtain raw-material from agriculture. Cotton textile, jute textile, sugar and vegetable oil are representative industries of agro-based group of industries

2. Mineral Based Industries:

The industries that receive raw materials primarily from minerals such as iron and steel, aluminium and cement industries fall in this category.

3. Pastoral-Based Industries:

These industries depend upon animals for their raw material. Hides, skins, bones, horns, shoes, dairy, etc. are some of the pastoral-based industries.

4. Forest Based Industries:

Paper card-board, lac, rayon, resin, tanning of leather, leave- utensils, basket industries are included in this type of industries.

V. Miscellaneous Industries:

Industries are also classified into the following miscellaneous categories.

1. Village Industries:

Village industries are located in villages and primarily cater to the needs of the rural people. They usually employ local machinery such as oil extraction, grain grinding and agricultural implements.

2. Cottage Industries: Industries which artisans set up in their own houses, work with wood, cane, brass, stone, etc. are called cottage industries. Handloom, khadi and leather work at the artisans house fall in this category.

3. Consumer Goods Industries:

Consumer industries convert raw materials or primary products into commodities directly used by the people. Textiles, bakeries, sugar, etc. are some of the consumer goods industries.

4. Ancillary Industries:

The industries which manufacture parts and components to be used by big industries for manufacturing heavy articles like trucks, buses, railway engines, tractors, etc. are called ancillary industries.

5. Basic Industries:

Industries on which depend many other industries for their manufacturing processes are called basic industries. Iron and steel industry and power generating industry are included in this category.

6. Capital-Intensive Industries:

Industries requiring huge investments are called capital-intensive industries. Iron and steel, cement and aluminum are outstanding examples of capital-intensive industries.

7. Labour-Intensive Industries:

Industries which require huge labour force for running them are called labour-intensive industries. In these industries, labour is more important than capital. Shoe- making and bidi-manufacturing, etc. are included in these industries.

Iron and Steel Industry in India:

Ours is an industrial age. On account of many qualities of hardness, strength, durability, malleability and cheapness, iron is the most important and widely used metal. Industrial growth, means of transport, cemented tall buildings, dams, tunnels, bridges, armaments etc. would not have been conceived and built without iron.

Iron and steel is basis for laying the vibrant Indian industry. Production of steel has come to exist as an index of a country's potential, industrial and economic growth. The making of iron and steel had been known to the people of India since long. The iron pillar of Delhi is a proof of it and speaks of the quality of steel produced in this country in ancient times.

The first attempt to start an iron and steel mill at Portonova in Tamil Nadu was made in 1830 by Joshia Heath with the help of East India Company. This attempt failed. Later, in 1870 a plant was set up at Kulti (near Kolkata). This plant was taken over by the Bengal Iron and Steel Company in 1889. Then first modern steel plant was set up in 1907.

The credit of steel manufacturing on large scale goes to Jamshed Ji Tata, who set up Tata Iron and Steel Company (TISCO) at Sakchi (Jamshedpur-Jharkhand). This plant produced iron in 1911 and steel in 1913. In 1919, Indian Iron and Steel Company established a steel plant, at Burnpur (Hira Pur-Kolkata).

In 1923, Visvesvaraya Iron and Steel Works Limited (Mysore) started functioning at Bhadravati (Karnataka). The protection granted by the government to the industry and the outbreak of World War II gave an impetus to the industry.

Till 1950, there were only three iron and steel manufacturing plants in India namely TISCO, IISCO and VISWL and produced only 10 lakh tonnes of steel and 15 lakh tonnes of pig iron.Iron and steel industry made rapid strides after independence. Three new integrated steel plants under Hindustan Steel Limited were set up at Rourkela (Orissa), Bhilai (Madhya Pradesh) and Durgapur (West Bengal).

. The expansion of programme of TISCO and IISCO was also taken in hand to increase the capacity to 20 lakh tonnes and 10 lakh tonnes respectively. In the Third Five Year Plan emphasis was given on the expansion of three plants under H.S.L. and a new plant at Bokaro (Jharkhand) was set up.

Fourth Five year Plan further emphasized on having maximum production from existing plants and starting new plants at Salem (Tamil Nadu), Vijaynagar (Karnataka) and Vishakhapatnam (Andhra Pradesh) in order to meet the increasing demand of steel in the country.In 1978, the installed ingot steel capacity increased to 106 lakh tonnes. The Salem Steel Plant started commercial production in 1982.

The management of IISCO was taken over by the Government of India in 1972 and ownership was acquired in 1976. In order to manage the affairs of execution of steel plants relating to iron and steel development, the Government of India set up an organization named Steel Authority of India Limited (SAIL) in January 1973.

Steel Authority of India (SAIL).

It was established in 1973. SAIL is a government undertaking and is responsible for the management of steel plants at Bhilai, Durgapur, Rourkela, Bokaro and Burnpur and also the Alloy Steel Plant at Durgapur and Salem.

Problems of the Iron and Steel Industry:

1. The industry demands huge capital investment.

2. Manufacturing technology is old and of poor quality.

3. The per capita labour productivity of an Indian is far less in comparison to that of Japan and Korea. It is 90-100 tonnes a year of an Indian worker and 600-700 tonnes per year in respect of Japanese and Korean workers.

4. Potential utilization rarely exceeds 80%. Strikes, dharnas and lockouts, shortage of raw material, energy and inefficient management.

5. A part of steel demand is met by imports which are done at an exhorbitant rate.

Cement Industry:

Cement is indispensible for building and construction work and cement industry is considered to be an important infrastructure core industry. It is one of the most advanced industries of India. In a developing country like India, the cement industry can play a significant role in the overall economic growth.

The per capita consumption of cement is taken as one of the important indicators of well being of the people. The average per capita consumption of cement in India was 110 kg in 2003-04 against the world average of 240 kg. This is

much lower than some of the advanced countries and there is vast scope for improving the situation. India is currently on a fast track of economic growth and if, the present growth trends continue, the per capita consumption is expected to touch 130 kg in 2010 even in the face of fast growing population

The first attempt to manufacture cement in India was made in 1904 when a mill based on sea shells as a source of limestone was established at Chennai. But this attempt proved abortive and a really successful attempt was made in 1912-13 when the Indian Cement Co. Ltd. set up a plant at Porbandar.

World War I gave impetus to cement industry in India. Consequently, Katni Cement and Industrial Co. Ltd. at Katni (M.P.) started production in 1915 and Killick Nixon's Bundi Portland Cement Co. at Lakheri (Rajasthan) commenced in 1916. A number of companies came into existence to make use of the post war boom. Six new factories at Dwarka (Gujarat), Japla (Bihar), Banmore, Mehgaon, Kymore (M.P.) and Shahabad (Karnataka) were erected by 1922-23.

Cement Production virtually took off the ground only after tariff protection was granted to this industry in 1924. A turning point came in 1934 when 10 out of 11 existing companies merged into the Associated Cement Co. Ltd. (ACC). The Dalmia Cement Group was also formed in 1937. This group set up factories at Dalmianagar (Bihar), Dalmiapuram (Tamil Nadu) and Dalmia (Charkhi) Dadri in Haryana.

By 1947, there were 18 cement factories with a capacity of 21.15 lakh tonnes and production of 20.16 lakh tonnes. Rapid economic progress associated with massive building programmes during the plan period accelerated the demand for cement and provided stimulus to this industry. India achieved self sufficiency in cement only in 1980s during the short five year period of partial decontrol.

Currently, the Indian cement industry is the second largest in the world after that of China. With a turnover of around Rs. 30,000 crore, the industry is the second biggest contributor to the exchequer. The Central government gets about Rs. 4,000 crore from excise duty and various state governments another Rs. 4,000 crore from sales tax yet another Rs. 2,000 crore comes from royalties, octroi and cesses.

The industry provides direct employment to 1.5 lakh persons and indirect employment to 1.2 million persons. As on 30 April 2004 there were 16 large cement plants with an installed capacity of 144.98 million tonnes. Apart from these, there are 300 mini and tiny plants spread all over the country. The estimated capacity of mini plants is about 11 million tonnes per annum. The mini plants play a supplementary role.

The production of cement has increased considerably during the plan period. It increased from a low of 2.7 million tonnes in 1950-51 to 8.0 million tonnes in 1960-61, 1970-71, 48.8 million tonnes in 1999-91 and 123.4 million tonnes in 2003-04

Given the enormous need for infrastructure and housing, which require large quantities of cement as a basic building material, the prospects of industry are bright. The Working Group on Cement Industry for the formulation of Tenth Five Year Plan and other studies on global competitiveness of the Indian cement industry highlight constraints such as high cost of power, high freight cost, inadequate infrastructure and poor quality of coal.

Distribution:

A look at the distribution pattern of cement factories reveals that they are mainly concentrated along the Vindhayan ranges—running from eastern Rajasthan to Jharkhand where abundant supply of good quality limestone is available.

In fact limestone deposits have acted as big magnets for attracting cement factories and rarely a factory in this region is situated at a distance of over fifty kilometres from the limestone quarries. The vast northern plain, on the other hand, is devoid of limestone deposits and does not support cement factories to any appreciable extent.

It is for this constraint of raw material that 86 per cent of the factories and 75 per cent of the production capacity is found in Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Rajasthan, Gujarat, Tamil Nadu, Karnataka and Bihar.

Madhya Pradesh and Chhattisgarh:

The combined installed capacity and production of these two neighbouring states have enabled them to occupy a leading position among the cement producing states of India. These two states account for about 21 per cent of the installed capacity and around 22.5 per cent of the total production.

There are at present 14 cement plants in the state. The main centres of production are Satna, Kymore, Katni, Maihar, Mandhar, Gopalnagar, Durg, Akaltara, Jamul, Banmore and Tilda. Several new plants especially in the Chhattisgarh are coming up.

Andhra Pradesh:

With 10.7 per cent of the total installed capacity and about 18 per cent of the total production of India. Andhra Pradesh occupies second place among the

cement producing states of India. Most of the 18 plants are concentrated in the Telangana belt. Peddapalli is the biggest plant with an installed annual capacity of 7 lakh tonnes. The other important producers are Krishna, Karimnagar, Cementnagar, Vijaywada, Panyon, Macherla, Mancherial, Tandur, Vishakhapatnam, Vizianagram, Nadikundi, Erranguntla, Yerranguntala, Adilabad, etc. Several mini plants are also coming up.

Rajasthan has surpassed Tamil Nadu and is now the third largest cement producing state accounting for over 11 per cent of India. The major cement plants skirt the Aravali Range where plenty of limestone is available. The large scale conversion of metre gauge railway lines into broad gauge has given the much needed improved transport facilities and stimulates cement industry in this region.

The state has 10 major plants and the main centres of production are Sawai Madhopur, Lakheri, Chittaurgarh, Udaipur, Nimbaheda and Sirohi. With an annual capacity of 8.5 lakh tonnes, the plant at Sawai Madhopur is the largest in Rajasthan.

Gujarat has suffered a decline in its share of cement production from 12.8 per cent in 1970 to 9 per cent in 2003-04 and is now relegated to fourth position among the major cement producing states of India. Gujarat had the advantage of an early start and the earliest successful attempt to manufacture cement was made at Porbandar.

The industry enjoys the benefit of large deposits of limestone in the state. Besides, sea shell can also be used. Large market of Western India is readily available. Ten plants of the state are located at Sika, Sevolia, Okha, Porbandar, Dwarka, Vadodara, Ranavav, Veraval and Bhavnagar. Tamil Nadu was a major

producer of cement in the 1970s but its share fell from about 17.1 per cent in 1970 to 8.7 per cent in 2003-04. There are 8 plants in the state which are located at Talaiyuthu, Alangulam, Tulukapatti, Dalmiapuram, Poliyur, Sankaridurg and Madukkarai.

Karanataka has also gone down from 10.4 per cent of contribution in 1979 to about 6.5 per cent in 2003-04. This state has a total of 8 plants. Bagalkot, Bhadravati, Shahabad, Ammasaudram, Bangalore and Krukunta are the main centres. The other producers are Bihar (Dalmia Nagar, Sindri, Japla, Chopan Chaibasa Khalari, Kalvanpur, Banjari), Uttar Pradesh (Dalla, Churk, Chunar), Maharashtra (Chandrapur Ratnagin, Saweri, Mumbai, Battam, Kolhapur), Haryana (Charkhi Dadn, Bhupendra), Orissa (Rajgangpur, Bargarh), Himachal Pradesh (Rajban and Gogal), J and K (Wuyon and Srinagar), Assam (Bakaja , Guwahati), West Bengal (Durgapur, Purulia, Madhukunda), Meghalaya (Siju).

Exports:

From a net importer, India has emerged as a major exporter of cement in the international market She entered the world cement scenario in 1989 with a meagre export of 1.6 lakh tonnes. India's cement exports have steadily increased since then and reached a level of 8.99 million tonnes in 2003-04.

The main buyers of Indian cement are Sri Lanka, Bangladesh, Myanmar, Indonesia, Malaysia, Nepal, Pakistan, Middle East countries and South-East Asian countries. The exports to these countries are likely to increase as they do not have appreciable deposits of limestone and cannot develop cement industry on their own.

Cotton Textile Industry in India:

India held world monopoly in the manufacturing of cotton textiles for about 3,000 years from about B.C. 1500 to A.D. 1500. In the middle ages, Indian cotton textile products were in great demand in the Eastern and European markets.

This industry could not survive in the face of strong competition from the modern mill industry of Britain which provided cheap and better goods as a result of Industrial Revolution in that country. Moreover, the British textile industry enjoyed political advantage at that time.

The first modem cotton textile mill was set up in 1818 at Fort Glaster near Kolkata. But this mill could not survive and had to be closed down. The firat successful modem cotton textile mill was established in Mumbai in 1854 by a local Parsi entrepreneur C.N. Dewar. Shahpur mill in 1861 and Calico mill in 1863 at Ahmedabad were other landmarks in the development of Indian cotton textile industry.

The real expansion of cotton textile industry took place in 1870's. By 1875-76 the number of mills rose to 47 of which over 60 per cent were located in Mumbai city alone. The industry continued to progress till the outbreak of the First World War in 1914. The total number of mills reached 271 providing employment to about 2.6 lakh persons.

The First World War, the Swadeshi Movement and the grant of fiscal protection favoured the growth of this industry at a rapid pace. Demand for cloth during the Second World War led to further progress of the industry. Consequently, the number of mills increased from 334 in 1926 to 389 in 1939 and

417 in 1945. Production of cloth also increased from 4,012 million yards in 1939-40 to 4,726 million yards in 1945-46.

The industry suffered a serious setback in 1947 when most of the long staple cotton growing areas went to Pakistan as a result of partition. However, most of the cotton mills remained in India. Under such circumstances, India faced a severe crisis of obtaining raw cotton.

The country had, therefore, to resort to large-scale imports of long staple cotton which was an extremely difficult task in view of the limited foreign exchange reserves. The only solution to this problem was to increase hectare-age and production of long staple cotton within the country. This goal was achieved to a great extent in the post partition era.

Present Position:

At present, cotton textile industry is largest organised modem industry of India. There has been a phenomenal growth of this industry during the last four decades. About 16 per cent of the industrial capital and over 20 per cent of the industrial labour of the country is engaged in this industry. The total employment in this industry is well over 15 million workers.

There are at present 1,719 textile mills in the country, out of which 188 mills are in public sector, 147 in cooperative sector and 1,384 in private sector. About three-fourths were spinning mills and the remaining one-fourth composite mills. Apart from the mill sector, there are several thousand small factories comprising 5 to 10 looms.

Some of them have just one loom. These are based on conventional handloom in the form of cottage industry and comprise decentralised sector of this

industry. Table 27.4 shows that the constitution of decentralised sector is much more than the organised sector.

It has increased rapidly from a mere 19.31 per cent in 1950-51 to 58.96 per cent in 1980-81 and made a sudden jump to 87.95 per cent in 1990-91. It gradually improved during the first half of 1990s and stood at 94.63 per cent in 2003-04.

Production:

Cotton cloth is produced in three different sectors viz., 1. Mills, 2. Power-looms and 3. Handlooms.

1. Mills:

The mill sector played a dominant role in cotton textile industry at the initial stage. But its importance was reduced drastically with the growth of powerlooms and handloom.

2. Powerlooms:

The decentralised powerloom sector plays a pivotal role in meeting the clothing needs of the country. The production of cloth as well as generation of employment has been rapidly increasing in powerloom sector. This sector not only contributes significantly to the cloth production in the country but also provides employment to millions of people.

3. Handlooms:

The handloom sector provides employment to over 65 lakh persons engaged in weaving and allied activities.Although the total production of cotton cloth increased considerably, the share of mill sector has been drastically reduced. This is an indication of our efforts to decentralise the industry and create greater employment opportunities.

There are about 40 lakh handlooms and about 5 lakh powerlooms in the decentralised sector. Although they are widely distributed throughout the country, states of Tamil Nadu, Uttar Pradesh, Assam and Manipur account for nearly 50 per cent of the production capacity. The rest are scattered in Nagaland, West Bengal, Madhya Pradesh, Andhra Pradesh. Maharashtra, Kerala, Rajasthan, Haryana and Jammu and Kashmir.

Distribution:

Although cotton textile mills are located in over 80 towns and cities of India, yet its larger concentration is found in Maharashtra, Gujarat, West Bengal and Uttar Pradesh.

Maharashtra:

Maharashtra excels all other states in the development of cotton textile industry. It produces 39.38 per cent mill cloth and 10.79 per cent yarn of India. About three lakh workers are engaged in this industry in Maharashtra. Mumbai is the largest centre in India having 63 mills out of Maharashtra's total of 122 mills. Mumbai is rightly called the Cottonopolis of India.

Apart from Mumbai, Solapur, Pune, Kolhapur, Satara, Wardha, Nagpur, Aurangabad, Amravati, Akola, Sangli, Chaligaon, Miraz, Mander, Jalgaon, etc. are other centres of cotton textile industry in Maharashtra.

Gujarat:

Gujarat is the second largest producer of cotton textiles. This state accounts for over 33 per cent of the mill cloth and over 8 per cent of the yam production of the country. Ahmedabad is the largest centre where 73 out of 118 mills of Gujarat are located. Ahmedabad is the second largest centre of cotton textile industry after

Mumbai. The other important centres of Gujarat are Vadodara, Bharach, Surat, Rajkot, Porbandar, Maurvi, Bhavnagar, Viramgam, Sidhpur, Kelot, Kadi, etc.

Madhya Pradesh:

Cotton is locally grown. Coal provides necessary energy. Abundant cheap labour is available due to backward economy of the masses. Gwalior, Ujjain, Indore, Dewas, Ratlam, Jabalpur, Bhopal, etc. are important centres.

Tamil Nadu:

Among the southern states, Tamil Nadu is an important cotton textile producer. Although Tamil Nadu produces only about 6 per cent of the mill cloth of India, the state excels all other states in the production of yam and accounts for over 44% of the total yam production of the country.

Coimbatore is the most important centre having 200 mills out of Tamil Nadu's 439 mills and is known as Manchester of South India. But Tamil Nadu's mills are of smaller size and give comparatively less production. Other important centres are Chennai (10 mills), Madurai, Tirunelveli, Tirucchchirappalli, Salem, Perambur, Tuticorin, etc.

West Bengal:

Kolkata is the most important centre of West Bengal. It enjoys facilities of a port, humid climate, coal from Raniganj, local labour due to high density of population and those of dyeing and washing. But Kolkata suffers from the disadvantage of being away from the main cotton- producing areas of India. The other important centres are Haora, Murshidabad, Hugli, Sirampur, Shiampur and Panihar.

Uttar Pradesh:

Most of cotton textile industry has developed in the western part of Uttar Pradesh. Kanpur is the largest centre and is known as Manchester of Uttar Pradesh. This city has 10 out of 52 cotton textile mills of the state.

Problems of Cotton Textile Industry:

Although cotton textile is one of the most important industries of India, it suffers from many problems. Some of the burning problems are briefly described as under:

1. Scarcity of Raw Cotton:

Indian cotton textile industry suffered a lot as a result of partition because most of the long staple cotton growing areas went to Pakistan. Although much headway has been made to improve the production of raw cotton, its supply has always fallen short of the demand. Consequently, much of the long staple cotton requirements are met by resorting to imports.

2. Obsolete Machinery:

Most of the textile mills are old with obsolete machinery. This results in low productivity and inferior quality. In the developed countries, the textile machinery installed even 10-15 years ago has become outdated and obsolete, whereas in India about 60-75 per cent machinery is 25-30 years old. Only 18-20 per cent of the looms in India are automatic

3. Erratic Power Supply:

Power supply to most cotton textile mills is erratic and inadequate which adversely affects the production.

4. Low Productivity of Labour:

Labour productivity in India is extremely low as compared to some of the advanced countries. On an average a worker in India handles about 2 looms as compared to 30 looms in Japan and 60 looms in the USA.

5. Strikes:

Labour strikes are common in the industrial sector but cotton textile industry suffers a lot due to frequent strikes by a labour force. The long drawn strike in 1980 dealt a severe below to the organised sector.

6. Stiff Competition:

Indian cotton mill industry has to face stiff competition from powerloom and handloom sector, synthetic fibres and from products of other countries.

7. Sick Mills:

The above factors acting singly or in association with one another have resulted in many sick mills. As many as 177 mills have been declared as sick mills. The National Textile Corporation set up in 1975 has been striving to avoid sick mills and has taken over the administration of 125 sick mills.

Exports:

India is a major exporter of cotton textiles. Cotton yarn, cloth and readymade garments form important items of Indian exports. Indian garments are well known throughout the world for their quality and design and are readily accepted in the world of fashion. The Expert Committee on Textile Policy set up in 1998 submitted its report to the Government in August 1999. One of the important targets outlined in the Textile Policy 2000 was to push textile and apparel exports from $ 11 billion to $ 50 billion by 2010 with the share of garments at $ 25 billion.

Sugar Industry in India:

Sugar can be produced from sugarcane, sugar-beet or any other crop having sugar content. But in India, sugarcane is the main source of sugar. At present, this is the second largest agro-based industry of India after cotton textile industry.

India is the world's largest producer of sugarcane and second largest producer of sugar after Cuba. But India becomes the largest producer if gur and khandsari are also included. This industry involves a total capital investment of Rs. 1,250 crore and provides employment to 2.86 lakh workers. In addition, 2.50 crore sugarcane growers also get benefit from this industry.

Growth and Development:

India has a long tradition of manufacturing sugar. References of sugar making by the Indians are found even in the Atharva Veda. India is rightly called the homeland of sugar. But in ancient times, only gur and khandsari were made and modem sugar industry came on the Indian scene only in the middle of the 19th century, when it was introduced by the Dutch in North Bihar in about 1840.

Unfortunately, this attempt could not succeed. The first successful attempt was made by the indigo planters at the initiative of Britishers in 1903 when Vacuum pan mills were started at Pursa, Pratabpur, Barachakia and Marhowrah and Rose in north-eastern U.P. and the adjoining Bihar.

The industry passed through an uncertain phase during and after the World War II and some stability was experienced only after 1950-51. There were 139 mills producing 11.34 lakh tonnes of sugar in 1950-51. After that, the plan period started and the industry made rapid strides. In the year 1994-95, there were 420 mills producing 148 lakh tonnes of sugar.

Localisation of Sugar Industry:

Sugar industry in India is based on sugarcane which is a heavy, low value, weight losing and perishable raw material. Sugarcane cannot be stored for long as the loss of sucrose content is inevitable. Besides, it cannot be transported over long distances because any increase in transportation cost would raise the cost of production and the sugarcane may dry up on the way.

It is estimated that 50 per cent cost of production is accounted for by sugarcane alone. Normally, it requires about 100 tonnes of sugarcane to produce 10-12 tonnes of sugar. Even today most of sugarcane is transported with the help of bullock carts and cannot be carried beyond 20-25 km.

The introduction of tractor- trolleys, trucks and even railway wagon have increased the distance covered by sugarcane to 70-75 kms. beyond which the transportation cost would increase exorbitantly. Therefore, the sugar industry is established in areas of sugarcane cultivation.

Distribution:

Sugar industry has two major areas of concentration. One comprises Uttar Pradesh, Bihar, Haryana and Punjab in the north and the other that of Maharashtra, Karnataka, Tamil Nadu and Andhra Pradesh in the south.

Maharashtra:

Maharashtra has progressed a lot and captured first position from U.P. to emerge as the largest producer of sugar in India. Large production of sugarcane, higher rate of recovery and longer crushing period are some of the factors which have helped the state to occupy this enviable position. The state has one-fourth of the total sugar mills and produces a little more than one-third of the total sugar of

India. Sugar mills of Maharashtra are much larger as compared to the mills in other parts of the country.

Uttar Pradesh:

Uttar Pradesh is the traditional producer of sugar and has been occupying the first rank among the major sugar producing states of India. Uttar Pradesh has more mills than Maharashtra but they are of comparatively smaller size and yield less production. Presently, the state accounts for about 24 per cent of the total production of sugar in India.

Tamil Nadu:

Tamil Nadu has shown phenomenal progress with regard to sugar production during the last few years. High yield per hectare of sugarcane, higher sucrose content, high recovery rate and long crushing season have enabled Tamil Nadu to obtain highest yield of 9.53 tonnes of sugar per hectare in the whole of India.

As a result of these advantages, the state has emerged as the third largest producer of sugar, contributing over nine per cent of the total sugar production of India. Most of the 32 mills of the state are located in Coimbatore, North Arcot Ambedkar, South Arcot Vallalur and Tiruchchirapalli.

Karnataka:

Karnataka has 30 mills producing 1,151 thousand tonnes or over 6 per cent of the total sugar of India. Belgaum and Mandya districts have the highest concentration of sugar mills. Bijapur, Bellary, Shimoga and Chittradurga are the other districts where sugar mills are scattered.

Andhra Pradesh:

Andhra Pradesh has more mills (35) than the neighbouring Karnataka but produces only 6.01 per cent of India's sugar. This means that the mills are comparatively smaller. Majority of the sugar mills are concentrated in East and West Godavari, Krishna, Vishakhapatnam, Nizamabad, Medak and Chittoor districts.

Gujarat:

Gujarat's 16 mills are scattered in Surat, Bhavnagar, Amreli, Banaskantha, Junagarh, Rajkot and Jamnagar districts. The state produces about 5.56 per cent of the total sugar produced in India.

Haryana:

Haryana has only 8 mills but their large size enables the state to contribute 1.91 per cent of the total sugar production. Sugar mills are located in Rohtak, Ambala, Panipat, Sonipat, Kamal, Faridabad and Hissar districts.

Punjab:

Punjab has a total of 13 mills which are located in Amritsar, Jalandhar, Gurdaspur, Sangrur, Patiala and Rupnagar districts.

Bihar:

Bihar was the second largest sugar producing state next only to Uttar Pradesh till mid- 1960s. Since then the state has been experiencing sluggish growth and consequently lost its prestigious position to the peninsular states like Maharashtra, Tamil Nadu, Karnataka and Andhra Pradesh. Its 28 mills make an insignificant contribution to the production of sugar.

Problems of Sugar Industry:

Sugar industry in India is plagued with several serious and complicated problems which call for immediate attention and rational solutions. Some of the burning problems are briefly described as under:

1. Low Yield of Sugarcane:

Although India has the largest area under sugarcane cultivation, the yield per hectare is extremely low as compared to some of the major sugarcane producing countries of the world. For example, India's yield is only 64.5 tonnes/hectare as compared to 90 tonnes in Java and 121 tonnes in Hawaii.

This leads to low overall production and results in short supply of sugarcane to sugar mills. Efforts are being made to solve this problem through the introduction of high yielding, early maturing, frost resistant and high sucrose content varieties of sugarcane as well as by controlling diseases and pests which are harmful for sugarcane.

2. Short crushing season:

Manufacturing of sugar is a seasonal phenomena with a short crushing season varying normally from 4 to 7 months in a year. The mills and its workers remain idle during the remaining period of the year, thus creating financial problems for the industry as a whole. One possible method to increase the crushing season is to sow and harvest sugarcane at proper intervals in different areas adjoining the sugar mill. This will increase the duration of supply of sugarcane to sugar mills.

3. Fluctuating Production Trends:

Sugarcane has to compete with several other food and cash crops like cotton, oil seeds, rice, etc. Consequently, the land available to sugarcane cultivation is not the same and the total production of sugarcane fluctuates. This affects the supply of sugarcane to the mills and the production of sugar also varies from year to year.

4. Low rate of recovery:

It is clear that the average rate of recovery in India is less than ten per cent which is quite low as compared to other major sugar producing countries. For example recovery rate is as high as 14-16 per cent in Java, Hawaii and Australia.

5. High cost of Production:

High cost of sugarcane, inefficient technology, uneconomic process of production and heavy excise duty result in high cost of manufacturing. The production cost of sugar in India is one of the highest in the world. Intense research is required to increase the sugarcane production in the agricultural field and to introduce new technology of production efficiency in the sugar mills. Production cost can also be reduced through proper utilisation of by- products of the industry.

6. Small and uneconomic size of mills:

Most of the sugar mills in India are of small size with a capacity of 1,000 to 1,500 tonnes per day. This makes large scale production uneconomic. Many of the mills are economically not viable.

7. Old and obsolete machinery:

Most of the machinery used in Indian sugar mills, particularly those of Uttar Pradesh and Bihar is old and obsolete, being 50-60 years old and needs

rehabilitation. But low margin of profit prevents several mill owners from replacing the old machinery by the new one.

8. Competition with Khandsari and Gur:

Khandsari and gur have been manufactured in rural India much before the advent of sugar industry in the organised sector. Since khandsari industry is free from excise duty, it can offer higher prices of cane to the cane growers.

Further, cane growers themselves use cane for manufacturing gur and save on labour cost which is not possible in sugar industry.

9. Regional imbalances in distribution:

Over half of sugar mills are located in Maharashtra and Uttar Pradesh and about 60 per cent of the production comes from these two states. On the other hand, there are several states in the north-east, Jammu and Kashmir and Orissa where there is no appreciable growth of this industry. This leads to regional imbalances which have their own implications.

10. Low per capita consumption:

The per capita annual consumption of sugar in India is only 16.3 kg as against 48.8 kg in the USA., 53.6 kg in U.K., 57.1 kg in Australia and 78.2 kg in Cuba and the world average of about 21,1 kg. This result in low market demand and creates problems of sale of sugar.

Jute Textiles Industry in India:

This is the second important textile industry of India after cotton textile industry. This industry existed in Bengal as handloom industry but the large-scale industry started in 1855 at Rishra, near Kolkata. In 1859, the first power looms were started in the same mill and the spinning as well as weaving was undertaken

It was an export-oriented industry and it made rapid progress. The number of jute mills increased from 24 in 1884 to 76 in 1918-19 and to 112 in 1947. This industry suffered a great setback as a result of partition of the country in 1947 because 81 per cent of the jute output went to Bangladesh (erstwhile East Pakistan) while 102 out of 112 jute mills remained in India. Consequently, acute shortage of raw jute was felt in India because we could not get the same from Bangladesh due to our political differences with that country.

Many of the sick and inefficient mills had to be closed down due to shortage of raw material. At present, there are 73 mills in India. A relentless campaign to increase the production of raw jute by increasing area under jute cultivation in the Brahmaputra valley, West Bengal, Tarai and in East coastal areas and by increasing yield per hectare eased the situation to a great extent. The production of raw jute increased from 33 lakh bales (of 180 kg each) in 1950-51 to 103 lakh bales in 2003-04.

West Bengal has the largest concentration of jute industry. This state has 56 jute mills and 41,2b looms which respectively account for 76 per cent and 80 per cent of all India installation. Over 84 per cent of jute goods production of India comes from West Bengal.

Andhra Pradesh is a distant second producing only 10 per cent of the Indian jute goods. Most of the mills are within a distance of 64 kilometres from Kolkata along the Hugli River. As a matter of fact, there is a narrow belt of jute mills which is 100 km long and 3 km wide along both the banks of Hugli River. Apart from Kolkata, the other important centres of jute textile industry are Titagarh (9 mills), Jagatdal (8 mills), Budge Budge (8 mills), Haora (8 mills), Bhadreswar (6 mills),

Bally, Agarpara, Rishra, Serampara, Shibpur, Shyamnagar, Bansbaria, Kankinara, Uluberia, Naihati, Baidyahati and many others

Problems of Indian Jute Industry:

Indian jute industry is facing some very serious problems. Some of these are briefly described as under:

1. Most of the jute-producing areas went to Bangladesh (erstwhile East Pakistan) resulting in acute shortage of raw jute. Although successful efforts have been made to increase the supply of raw jute since Independence, it still falls short of our current requirements.

2. Most of our customers could not get our jute products during World War II as a result of which several countries developed many substitutes to jute. Even today, our jute industry has to face a very tough competition from synthetic packing materials of the advanced countries of Europe and North America. As such the market for jute goods has shrunk.

3. The newly established mills and improved machines in Bangladesh are able to produce better quality goods and have an edge over the Indian jute products in the international markets.

4. The overall demand for jute products is gradually decreasing in the international market.

5. The input cost for jute products in India is quite high.

In order to solve the above-mentioned problems, we have to increase the production of raw jute in India for which new areas are to be brought under jute

cultivation. There is also an urgent need for replacing the old and obsolete machinery in order to compete quality wise.

The National Jute Manufacturing Corporation has undertaken the modernisation of its units. Attempts are being made to diversify the product range, to improve the quality of goods, to reduce the cost and to develop new products.

Exports:

It is traditionally an export oriented industry and its survival largely depends upon its export performance. The rise and fall of the industry is closely linked with demand for jute goods in the international and national market. India lost much of her market as a result of World War-II and owing to sharp rise in synthetic substitutes as packing materials.

Some of the advanced countries are becoming conscious about the environmental degradation with the increasing use of non-biodegradable materials such as plastic bags for packing and are trying to discourage such a practice.

In the state of Andhra Pradesh, there are 4 jute mills. The important centres are Guntur, Ongole, Nelimarla and Eluru. In Uttar Pradesh jute mills have been developed at Kanpur and Gorakhpur. The states of Bihar (3), Andhra Pradesh (4), Madhya Pradesh (1) and Assam (1) have also Jute mills.

India manufactures over one million tons of jute goods every year. The year-wise production is as under:

1982- 83 13 4 lakh tonnes
1983- 84 10-9 lakh tonnes

1985-86 13 S lakh tonnes

About 35% of the manufactured jute items are exported. In 1982-83, the country earned Rs. 202-76 crores by way of exporting jute goods, whereas in 1985-86, India exported jute manufacturing's worth Rs. 270 crores.

The markets are Australia, New Zealand, U.S.A., Canada, Indonesia, Japan, Argentina, and Russia, European, African and Middle East countries.

The jute textile industry faces a number of **problems**. They are:

(i) Shortage of superior quality jute, (ii) labour strikes and lockouts, (iii) old machinery, (iv) competition with Bangladesh products and (v) emergence of Thailand, Myanmar, Philippines and Brazil in the filed of jute production and jute manufacturing's.

The use of other substitutes like bags made of sisal, hemp and synthetic fibers are gradually encroaching market of jute manufacturing.

In the recent years cut in power supply has become another problem for the industry. However, the jute mill industry has made a great progress in the country.

In 1971, Jute Corporation of India was set up with its headquarters at Kolkata, with a view to stabilize price of raw jute and marketing of jute products abroad.

The jute industry is traditionally export oriented. India ranks first in raw jute and jute goods production. It ranks second in export of jute goods in the world. Jute packing materials are facing tough competition from other low cost synthetic substitutes.

The jute industry of India is confronted with **many problems** and jute mills hardly operate to their full capacity.

(a) Shortage of raw materials-Non-availability of sufficient quantity of superior quality raw material is one of the major problems of the industry. To meet this shortage, raw material is imported. Efforts are being made to augment the domestic production by introducing jute cultivation in non- traditional areas.

(b) Competition from substitutes-Jute industry is largely an export oriented industry. Prior to Independence India had virtual monopoly in raw jute and manufactures. Not only countries like Bangladesh, Philippines, Japan and Brazil etc have come out as stiff competitors but use of paper, cloth and plastic etc as substitute for jute goods is badly affecting the export market. To overcome these problems there is a need to modernise the jute industry, bring down the cost of production and diversify production to find out new uses of jute goods.

(c) Lack of modernisation of plant and machinery-the jute industry is faced with the problem of obsolete and worn-out plant and machinery. This hampers the quality and quantity of jute manufactures. The continued dependence on an antiquated labour intensive technology has now turned 70 per cent of the jute mills sick (Ganguli, R, Economic Times, July 7, 1994).

(d) High prices-The jute industry is also plagued with high prices due to obsolete machinery, existence of inefficient and uneconomic units, high price of raw jute and unreliable supply of raw jute for the mills. A sizeable number of jute mills are sick and the profitability of the industry has been low.

(e) Fluctuating Production-the production of jute manufactures has been fluctuating from year to year. This is due to irregular and inadequate supplies of raw jute, shortage of power, slackness of export demand, and lack of incentive.

Measures have been taken to improve the production and regular supply of raw jute.

Jute industry is a vital industry. The government has taken a number of measures to tackle these problems..

The UNDP caters to the needs of the jute sector from production to export stage. The National Centre for Jute Diversification (NCJD), established in late 1995), has played an important role in commercialisation of technologies for the manufacture of jute diversified products and creating awareness about the uses of jute in non-conventional applications. With the launching of the National Jute Programme (NJP), a few years ago, aided by the Government and the United National Development Programme jute has received the fillip it deserved to surge ahead.

The International Jute Organisation (IJO) held a conference recently for drafting specifications for hydro-carbon free jute bags to be used as packing material for food grains. There are 23 research institutions and over $23 million has been spent by the UNDP with matching grants by the Government of India under its National Jute Programme (NJP).

Engineering Industry in India:

India has a strong engineering and capital goods base. The engineering sector is the largest sector among the industrial segments in India and provides direct and indirect employment to a large number of skilled and non-skilled workers. It is a diverse industry with a number of segments, and can be broadly categorized into two segments, namely, heavy engineering and light engineering.

Classification of the Engineering Sector in India

Sub-segments	Number of Organised Players
Heavy Engineering Sector	
Cement Machinery	18
Sugar Machinery	27
Rubber Machinery	19
Metallurgical Machinery	39
Machine Tool	125
Material Handling Equipment	50
Mining Machinery	32
Dairy Machinery	16
Light Engineering Sector	
Welded steel pipes & tubes	123
Process Control Instrument	26
Antifriction Roller Bearing	19
Plain paper copier	12

Heavy engineering industry comprises of textile machinery, cement machinery, sugar machinery, rubber machinery, material handling equipments, oil field equipments, metallurgical machinery, mining machinery, dairy machinery And machine tools. The major end-user industries for heavy engineering goods are power, infrastructure, steel, cement, petrochemicals, oil & gas, refineries, fertilisers, mining, railways, automobiles, textiles, etc.

The Indian **light engineering industry** is highly diversified, comprising of a number of distinctive sectors and sub-sectors. The product range in this industry varies from highly sophisticated microprocessor based process control equipment and diagnostic medical instruments to low-tech items such as castings, forgings, and fasteners, among others. The sector also includes products such as bearings, steel pipes and tubes, etc. Most of the products in the light engineering industry serve as inputs for the capital goods industry. The health of the light engineering industry is therefore dictated by the demand for capital goods.

Industrial Policy

The first industrial policy of the Government of India was announced in April 1948. Subsequently Industrial Policy resolutions were announced in 1956, 1980, 1990 & 1991. The progress in industrial policy reforms enabled the country to pass through a long but successful journey. The policy changes brought out after 1991 have been announced in the form of Press Notes by the Department of Industrial Policy and Promotion.

At the time of independence, India had an extremely underdeveloped and unbalanced industrial structure. Industries contributed less than one sixth part of national income. The country did have some industries like cotton textiles, jute and sugar, but there were virtually no basic, heavy and capital goods industries on which programmes of future industrialization could be based. Whatever major industries were there, they were largely concentrated in a few areas such as Bombay. Surat, Ahmadabad. Jamshedpur, Calcutta, Delhi etc. while the rest of the country remained industrially neglected.

Thus after independence, the government of India had to undertake effective measures to increase the tempo of industrialization. Correct regional imbalances in industrial development and rectify the distorted industrial structure through rapid development of capital goods industries.

Industrial policy is a statement which defines the role of government in industrial development. The place of the public and private sectors is industrialization of the country and the relative role of large and small industries. The industrial policy thus formally indicates the spheres of activity of the public and the private sectors. It lays down rules and procedures that would govern the

growth and pattern of industrial activity. The industrial policy is neither fixed nor inflexible. It is amended, modified and redrafted according to the changed situations, requirements and perspectives of developments.

Objectives:

The major objectives of industrial policy are:

(i) Rapid Industrial Development:

The industrial policy of the Government of India is aimed at increasing the tempo of industrial development. It seeks to create a favorable investment climate for the private sector as well as mobilize resources for the investment in public sector. In its way the government seeks to promote rapid industrial development in the country.

(ii) Balanced industrial Structure:

The industrial policy is designed to correct the prevailing lopsided industrial structure. Thus, for example, before independence, India had some fairly developed consumer goods industries. But the capital goods sector was not developed at all and basic and heavy industries were by and large absent.

So the industrial policy had to be framed in such a manner that these imbalances in the industrial structure are corrected. Thus by laying emphasis on heavy industries and development of capital goods sector, industrial policy seeks to bring a balance in industrial structure.

(iii) Prevention of Concentration of Economic Power:

The industrial policy seeks to provide a framework of rules, regulations and reservation of spheres of activity for the public and the private sectors. This is aimed at reducing the monopolistic tendencies and preventing concentration of economic power in the hands of a few big industrial houses.

(iv) Balanced Regional Growth:

Industrial policy also aims at correcting regional imbalances in industrial development. It is quite well-known that some regions in the country are industrially quite advanced e.g., Maharashtra and Gujarat while others are industrially backward, like Bihar, Orissa. It is the task of industrial policy to work out programmes and policies which lead to industrial development or industrial growth.

The Industrial policy of 1948, which was the first industrial policy statement of the Government of India, was changed in 1956 in a public sector dominated industrial development policy that remained in force till 1991 with some minor modifications and amendments in 1977 and 1980. In 1991, far reaching changes were made in the 1956 industrial policy. The new Industrial Policy of July 1991 heralded the framework for industrial development at present.

Industrial Policy Resolution 1948

At the time of India's independence, Industries were grouped into three categories as follows:

1. **Government Monopoly:** This category included armaments, railways, transport and some other industries.
2. **Basic and Strategic Industries:** This category included industries such as Coal, Iron & Steel, Ship Building, Mineral Ores etc. They were also vested with the state.
3. **Private Industry:** The rest of the industries which included small, medium and cottage industries were open to the private sector.

The first five year plan with major focus was on agriculture was launched in 1951-52 and it gave very good results in India's agricultural growth.

In 1948, immediately after Independence, Government of India introduced the **Industrial Policy Resolution 1948**. This reiterated the above classification and emphasized the approach to industrial growth and development.

The Industrial Policy Resolution 1948 was passed at a time when, our constitution was not adopted and there was no legal framework. But the idea was to keep the industries under the exclusive ownership of **Government (Public Sector), Private sector and Joint sector**. The beginning was made. The constitution was adopted in 1950 and in March 1950, India's planning commission was constituted. This was followed by an **Industrial (Department and Regulation) Act** of **IDR Act** of 1951.

- IDR act 1951 was the first act post independence which empowered the government of India to take necessary steps to regulate the pattern of Industrial development **through licensing.**

The IDR act paved the way for India's first comprehensive statement on the strategy for industrial development in India.

- In the **Avadi session of Indian National Congress in 1955** the Congress stated that object of the planning has to be "**Socialist Pattern**" and not absolute "**Socialism**".
- The Socialist pattern meant that India has to be a **mixed economy** where private & public sector would coexist.

The ideas were getting crystallized and in 1955, pursuant with the "**Socialist Pattern**", Imperial Bank of India, which came into being in 1921, came under the public sector and **became "State Bank of India" in 1955.**

This was followed by; in **1956,** the merger of more than 200 insurance companies and provident societies and this was the birth of **Life Insurance Corporation of India**.

In 1956, first comprehensive statement on the strategy for Industrial Development in India was introduced by the government as **Industrial Policy Resolution 1956**.

Industrial Policy Resolution – 1956

The Industrial Policy Resolution was based upon the **Mahalanobis Model of growth**. This Model suggested that **there should be an emphasis on the heavy industries**, which can lead the Indian Economy to a long term higher growth path. The most important outcomes of the Industrial Policy Resolution – 1956 were:

1. Scope of the Public Sector in India got widened.
2. The Government's aim to achieve a socialistic pattern of growth was reiterated.
3. A clear Cut classification of industries was done in India for the first time.

4. All the industries of basic and strategic importance and the industries which had a nature of public utility of services and all those which required large scale investment were strictly kept under the Government sector.
5. Provision of Compulsory Licensing was cemented.
6. The policy paved the way of development of Public Sector in India.

Classification of Industries:

In the Industrial Policy Resolution – 1956, industries were classified into three categories named as Schedule A, Schedule B & Schedule C.

- **Schedule A** referred to the industries in which Central Government kept the Monopoly.
- **Schedule B** referred to the industries in which State Governments were given the duty to take measures and;
- Whatever was left was put in **Schedule C** which was open to the private enterprises.

Schedule A:

This comprised 17 industrial areas which were strictly under the Central Government. The companies of this area were known as CPSE (central Public Sector Undertakings). The CPSU's later became popular as PSUs. The 17 areas were:

1. Arms and ammunition and allied items of defense equipment.
2. Atomic energy.
3. Iron and Steel.
4. Heavy castings and forgings of iron and steel.

5. Heavy plant and machinery required for iron and steel production, for mining, for machine tool manufacture and for such other basic industries as may be specified by the Central Government.
6. Heavy electrical plant including large hydraulic and steam turbines.
7. Coal and lignite.
8. Mineral oils.
9. Mining of iron ore, manganese ore, chrome-ore, gypsum, sulphur, gold and diamond.
10. Mining and processing of copper, lead, zinc, tin, molybdenum and wolfram.
11. Minerals specified in the Schedule to the Atomic Energy (Control of Production and Use) Order,
12. 1953.
13. Aircraft.
14. Air transport.
15. Railway Transport.
16. Ship Building.
17. Telephones and telephone cables telegraph and wireless apparatus (**excluding radio receiving sets**).
18. Generation and distribution of electricity.

Schedule B:

This comprised 12 industrial areas which were put to the State Governments to take measures and was left to the state government to follow up with the private sector with provisions of compulsory licensing. However, Schedule B **DID NOT** gave Monopoly to State Governments, as monopoly given to centre in Schedule A. They had to be State owned but private sector was expected to supplement the efforts of the State. States were expected to facilitate and encourage development

of these industries in the private sector, in accordance with the programmes formulated under the Five Year Plans. The areas of Schedule B were:

1. All other minerals except 'minor minerals' as defined in Section 3 of the Minerals Concession Rules 1949.
2. **Aluminum and other non-ferrous metals** not included in Schedule A.
3. Machine tools.
4. Ferro-alloys and tool steels.
5. Basic and intermediate products required by chemical industries such as the manufacture of drugs, dye-stuffs and plastics.
6. Antibiotics and other essential drugs.
7. **Fertilizers**
8. Synthetic rubber.
9. Carbonization of coal.
10. Chemical pulp.
11. **Road transport.**
12. **Sea transport.**

(Words in **bold** mean nothing except that the author considers them important for objective tests)

Schedule C:

The Industrial areas which were left out of the Schedule A & B were left with the private sectors with provisions of licensing and subject to regulation under the IDR Act.

Some more features of Industrial Policy Resolution 1956:

- **All the Schedule B** and **many of the Schedules C** came under provisions of compulsory licensing and thus Industrial Policy established “License Raj” In India.
- **Public sector for heavy industries was made the main vehicle for Industrial growth**
- **To tackle the regional disparity, PSUs were to be established in backward regions.**
- **Small Scale Industries and Agriculture sector was given priority in development.**

Meaning and Concept of Small Scale Industry:

In most of the developing countries like India, Small Scale Industries (SSI) constitutes animportant and crucial segment of the industrial sector. They play an important role inemployment creation, resource utilisation and income generation and helping to promotechanges in a gradual and phased manner. They have been given an important place in theframework of Indian planning since beginning both for economic and ideological reasons.The reasons are obvious.The scarcity of capital in India severely limits the number of non-farm jobs that can becreated because investment costs per job are high in large and medium industries. Aneffective development policy has to attempt to increase the use of labour, relative to capitalto the extent that it is economically efficient.Small scale enterprises are generally more labour intensive than larger organisations. As amatter of fact, small scale sector has now emerged as a dynamic and vibrant sector for theIndian economy in recent years. It has attracted so much attention not only from industrialplanners and economists but also from sociologists, administrators and politicians.Definition of Small Scale Industry:Defining small-scale industry is a difficult task because the definition of small-scale industryvaries

from country to country and from one time to the in the same countrydepending upon the pattern and stage of development, government policy andadministrative set up of the particular country.Every country has set its own parameters in defining small-scale sector. Generally, small-scale sector is defined in terms of investment ceilings on the original value of the installedplant and machinery. But in the earlier times the definition was based on employment. Inthe Indian context, the parameter is as follows.The Fiscal Commission, Government of India, New Delhi, 1950, for the first time defined asmall-scale industry as, one which is operated mainly with hired labour usually 10 to 50hands.Fixed capital investment in a unit has also been adopted as the other criteria to make adistinction between small-scale and large-scale industries. This limit is being continuouslyraised up wards by government.

The Small Scale Industries Board in 1955 defined, "Small-scale industry as a unit employingless than 50 employees if using power and less than 100 employees if not using power andwith a capital asset not exceeding Rs. 5 lakhs".The initial capital investment of Rs. 5 lakhs has been changed to Rs. 10 lakhs for small industries and Rs. 15 lakhs for ancillaries in 1975. Again this fixed capital investment limitwas raised to Rs. 15 lakhs for small units and Rs. 20 lakhs for ancillary units in 1980.

The Government of India in 1985 has further increased the investment limit to Rs. 35 lakhs forsmall-scale units and 45 lakhs for ancillary units.Again the new Industrial Policy in 1991, raised the investment ceilings in plant andmachinery to Rs. 60 lakhs for small-scale units and Rs. 75 lakhs for ancillary units.As per the Abid Husain Committees recommendations on small-scale industry, theGovernment of India has, in March 1997 further raised investment ceilings to Rs. 3 croresfor small-scale and ancillary industries and to Rs. 50 lakhs for tiny

industry.The new Policy Initiatives in 1999-2000 defined small-scale industry as a unit engage inmanufacturing, repairing, processing and preservation of goods having investment in plantand machinery at an original cost not exceeding Rs. 100 lakhs.In case of tiny units, the cost limitation is up to Rs. 5 lakhs. Again, the Government of Indiain its budget for 2007-08 has raised the investment limit in plant and machinery of small-scale industries to 1.5 corers An ancillary unit is one which is engaged or proposed to beengaged in the manufacture c production of parts, components, sub-assemblies, tooling orintermediaries or rendering services and the undertaking supplies or renders or proposes tosupply or render not less than 50% of its production or services, as the case may be, to oneor more other Industries undertakings and whose investment in fixed assets in plant andmachinery whether held on ownership terms or lease or on hire-purchase does not exceedRs. 75 lakhs.For small-scale industries, the Planning Commission of India uses terms village an small-scale industries. These include modern small-scale industry and the traditional cottage andhousehold industry.

Small Scale Industries may sound small but actually plays a veryimportant part in the overall growth of an economy. Small ScaleIndustries can be characterized by the unique feature of labourintensiveness. The total number of people employed in this industryhas been calculated to be near about one crore and ninety lakhs inIndia, the main proponents of Small scale industries.The importance of this industry increases manifold due to theimmense employment generating potential. The countries which are characterized by acuteunemployment problem especially put emphasis on the model of Small Scale Industries.It has been observed that India along with the countries in the Indian continent have gonelong strides in this field.Advantages associated with Small Scale Industries This industry is especially specialized in the production of consumer commodities. Small scale industries can

be characterized with the special feature of adopting the labour intensive approach for commodity production. As these industries lack capital, so they utilize the labour power for the production of goods. The main advantage of such a process lies in the absorption of the surplus amount of labour in the economy that was not being absorbed by the large and capital intensive industries. This, in turn, helps the system in scaling down the extent of unemployment as well as poverty. It has been empirically proved all over the world that Small Scale Industries are adept in distributing national income in more efficient and equitable manner among the various participants in the process of good production than their medium or larger counterparts. Small Scale Industries help the economy in promoting balanced development of industries across all the regions of the economy. This industry helps the various sections of the society to hone their skills required for entrepreneurship.

Small Scale Industries act as an essential medium for the efficient utilization of the skills as well as resources available locally. Small Scale Industries enjoy a lot of help and encouragement from the government through protecting these industries from the direct competition of the large scale ones, provision of subsidies in the form of capital, lenient tax structure for this industry and many more

MSMEs in India:

The Micro, Small and Medium Enterprises (MSMEs) play a pivotal role in the economic and social development of the country, often acting as a nursery of entrepreneurship. They also play a key role in the development of the economy with their effective, efficient, flexible and innovative entrepreneurial spirit. The MSME sector contributes significantly to the country's manufacturing output,

employment and exports and is credited with generating the highest employment growth as well as accounting for a major share of industrial production and exports. MSMEs have been globally considered as an engine of economic growth and as key instruments for promoting equitable development. The major advantage of the sector is its employment potential at low capital cost. The labour intensity of the MSME sector is much higher than that of large enterprises. MSMEs constitute more than 90% of total enterprises in most of the economies and are credited with generating the highest rates of employment growth and account for a major share of industrial production and exports. In India too, MSMEs play an essential role in the overall industrial economy of the country. In recent years, the MSME sector has consistently registered higher growth rate compared with the overall industrial sector. With its agility and dynamism, the sector has shown admirable innovativeness and adaptability to survive the recent economic downturn and recession.

The MSME sector in India is highly heterogeneous in terms of the size of the enterprises, variety of products and services,and levels of technology. The sector not only plays a critical role in providing employment opportunities at comparatively lower capital cost than large industries but also helps in industrialisation of rural and backward areas, reducing regional imbalances and assuring more equitable distribution of national income and wealth. MSMEs complement large industries as ancillary units and contribute enormously to the socioeconomic development of the country

Key challenges faced by the MSME sector:

• Lack of availability of adequate and timely credit

• High cost of credit

• Collateral requirements

• Limited access to equity capital

• Procurement of raw material at a competitive cost

• Problems of storage, designing, packaging and product display

• Lack of access to global markets

• Inadequate infrastructure facilities, including power, water, roads, etc

• Low technology levels and lack of access to modern technology

• Lack of skilled manpower for manufacturing, services, marketing, etc

• Multiplicity of labour laws and complicated procedures associated with compliance of such laws.

Despite the various challenges it has been facing, the MSME sector has shown admirable innovativeness, adaptability and resilience to survive the recent economic downturn and recession.

Cottage industries in India:

An industry where the creation of products and services are home-based, rather than factory-based, While products and services created by cottage industry are often unique and distinctive given the fact that they are usually not mass-produced, producers in this sector often face numerous disadvantages when trying to compete with much larger factory-based companies.

Cottage industries in India are all over the Country. This is an employment opportunity for people who know how to make articles such as rugs, clothing, jewelry and other things. It is usually done at home and then sold. The industry tries to preserve the cultural history of the people.

Importance of cottage industries in India

Cottage industry or home industry means the manufacturing of goods at home by hands, with small capital and on a small scale by the members of a family. Cottage industries are part time or supplementary occupations.

In the past , cottage industries played an important role in the economy of our country. They provided employment to a large number of people. The destruction of the cottage industries is one of the main causes of poverty in our country.

Ours is an age of machine and large scale industries. Yet even in the highly industrialized country like Japan and Germany, a good proportion of their industries are run in a 'domestic' system.

In India cottage industries have a more important part to play than any other country. They can help a lot in solving the problem of unemployment and poverty. For more than four months in a year, our cultivators have no work to do. Cottage industries can give the cultivator useful employment during spare time. That was why Mahatma Gandhi laid emphasis on reviving the dying cottage industries. Since Independence the country, the government too has been making all possible efforts in this direction.

Cottage industries have some real and practical advantages. They make the best use of woman labour. They make the work joyful and pleasant. There is no corruption and no exploitation of the poor by the rich. In cottage Industries there is no fear of a quarrel between the labour and factory owner.

In far time Cottage Industries become the vital importance. Large scale Industries provide an easy target to the enemy planes for bombing Tom the air. Their destruction may throw the whole economic structure of the country out of the gear. But if Cottage Industries are well organized, the supply of the country's needs can be maintained to large extent.

Cottage Industries can successfully complete with machine made goods, if they are run on modern lines. Periodic exhibitions of the good; manufactured by Cottage Industries and development of Co-operative system are of great advantage for their progress. Co-operative system can help in solving the problems of capital, raw material and marketing then they would easily withstand the competition Large Scale factory production.

It is a kind of specialized form of small scale industry where the production of commodity takes place in the surroundings of homes and the workers, the so called labors are supplied by the family members only. In general the machineries commonly used at homes, are utilized for the production of commodities. Basically it is a home made product unorganized and produced at home by the tradition of generation. The commodities of these industries are basically consumable products and that are being produced through the utilization of the traditional techniques. In the atmosphere of prevailing unemployment, people have no alternative but to go for home made small scale industries for the survival of livelihood. Thus a huge section of labor of large population is absorbed to stabilize the rural economy.

China is a Competitor to India in Cottage Industry:

China is like India a highly populated country who flourishing her cottage Industry by the utilization of the mass population in large scale production of rural product. China is now one of the fastest budding economies of the world. China supplies her products to all markets, all over the world. The items of the cottage industries of India do not find any buyers in India and abroad as well because of their high prices or because of availability of better quality goods elsewhere. China is a country of tough competitor to India in regard to Cottage Industry. Once, home-made clothes were made by the "Charkha" of Gandhi. Those days have gone, now the people get inspiration from the dresses used by Bollywood or their favorite pop-stars. The future of Indian textiles carries a big question mark.People prefer to eat olive oil to ghee and avoid pickles. People use allopath instead of Indian Ayurveda. Thus the herbal medicines and indigenous food items draw a lesser number of buyers. In consideration of all these, the Cottage Industry of India had to fight a better battle a head for survival.

INDIAN COTTAGE INDUSTRY AT A GLANCE IN 2011 - 2012

Indian Industries

Classified under RED category	Aluminium industry, Cement industry, Construction industry, Copper industry, Dairy industry, Diamond industry, Fashion industry, Fertilizer industry, Film industry, Granite industry, Health care industry, Jewellery industry, Mining industry, Oil industry, Paint industry, Paper industry, Power industry, Printing industry, Rubber industry, Silk industry, Soap industry, Steel industry, Sugar industry, Textile industry, Tabacco industry, Zinc industry
Classified under ORANGE category	Automobile industry, Cotton industry, Hotel industry, Jute industry, Pharmaceutical industry, Tractor industry, Weaving industry
Classified under GREEN category	Advertising industry, Agricultural industry, Aviation industry, Banking industry, Biotechnology industry, Biscuit industry, Chocolate industry, Coir industry, Cosmetic industry, Cottage industry, Electronic industry, Food Processing industry, Furniture industry, Garment industry, Insurance industry, IT industry, Leather industry, Music industry, Mutual fund industry, Pearl industry, Plastic industry, Poultry industry, Railway industry, Real estate industry, Shipping industry, Solar industry

INDIAN COTTAGE INDUSTRY

Size of the Industry	Spread all around the country with Textile, Cotton and other handicrafts items.
Geographical distribution	Rajasthan, Pune, Gujarat, Mumbai, Hyderabad, Bangalore
Output per annum	It accounts for more than 12 billion per annum

Transport Coordination in Developing Countries

Transport coordination is very essential in developing countries so as to fulfill the utilization of scarce resources**.** Unwanted competition among other form of transport can be eliminated through transport coordination – railway and road transport, shipping and airways. The competition is the main hindrance of transport sector growth. The governments in all developing countries are seriously engaged in seeking proper policy of coordination among various modes of transportation. Transport coordination helps in overall economy development. The objective of transport coordination is the combined use of a nation's transport resources and potential in such a way as to obtain the maximum benefits from each form of transport, based on the inherent advantages of each as reflected in operating costs and standards of service. The guiding principles in formulation of transport coordination policy in a developing country should be the following:

There should be cooperation in providing facilities for an easy transshipment of passengers and goods between areas served by different modes of transport. A sort of balance in provision of transport facilities should be maintained.

In the developing countries, there is scope for joint road rail, Rail River and road river services. Transport coordination is difficult in few countries. The proper planning will help in developing a new transport system with coordinating with old transport system.

Indian Roadways:

Roads have been existing in India for the last 5000 years. In early stages of Indian history, Ashoka and Chandragupta made efforts to construct roads. But the real progress was made during the Mughal period.

A number of roads were laid during the Sultanate and Mughal periods. Most of the present trunk routes follow the Mughal routes. These routes were essential for strengthening and consolidating the empire.

One such road was constructed by Sher Shah Suri which connected Peshawar to Kolkata. It was named as Grand Trunk (G.T.) Road and joined Amritsar with Kolkata after partition of India in 1947. Presently, it is known as 'Sher Shah Suri Marg'.

Importance of Roads:

1. Roads play a very important role in the transportation of goods and passengers for short and medium distances.

2. It is comparatively easy and cheap to construct and maintain roads.

3. Road transport system establishes easy contact between farms, fields, factories and markets and provides door to door service.

4. Roads can negotiate high gradients and sharp turns which railways cannot do. As such, roads can be constructed in hilly areas also.

5. Roads act as great feaders to railways. Without good and sufficient roads, railways cannot collect sufficient produce to make their operation possible.

6. Road transport is more flexible than the railway transport. Buses and trucks may be stopped anywhere and at any time on the road for loading and unloading passengers and goods whereas trains stop only at particular stations.

7. Perishable commodities like vegetables, fruits and milk are transported more easily and quickly by roads than by railways.

Due to above-mentioned advantages, the road transport has become very popular and its share is constantly increasing.

Growth and Development:

Road transport in modern sense i.e. vehicles driven by internal combustion engines using petrol or diesel as fuel was practically negligible in India before World War II. Following plans have been drawn to develop roadways in India.

1. Nagpur Plan:

First serious attempt to develop roadways was made in 1943 when Nagpur Plan was drawn.. The highlight of the plan was that no village in a developed agricultural region should be more than 8 km from a major road or 3 km away from any other road while the average distance of villages from a major road should be less than 3.2 km.

This plan could not be implemented immediately because the country was ruled by a number of princely states outside British India

2. Twenty Year Plan:

After achieving the objectives of the Nagpur Plan, another plan known as Twenty Year Road Plan was drawn in 1961. It aimed at increasing the road length from 6.56 lakh km to 10.60 lakh km and the density to 32 km of road per 100 sq km by 1981.

3. **The Rural Development Plan** includes construction of rural roads under Minimum Needs Programme (MNP), Rural Landless Employment Guarantee Programme (RLEGP), Jawahar Rojgar Yojana (JRY) and Command Area Development (CAD) programmes to connect all villages having a population of

1,500 or more with all weather roads and those having less than 1,500 population with a link roads.

4. **Build Operate Transfer (BOT**) is a scheme under which private operators are invited to construct roads and bridges. They are allowed to collect toll tax from the vehicles using these roads and bridges for a specific period of time after which these assets are transferred to the government..

5. **Central Road Fund (CRF)** is being raised for the betterment of roads by imposing additional excise/customs duty at the rate of Rs. 1.50 per litre on petrol with effect from 2 June 1998 and on High Speed Diesel (HSD) with effect from February 28, 1999.

The Central Road Fund Act 2000 was enacted in December, 2000 with the primary objective of providing regular and adequate flow of funds for development of the road sector.

Classification of Roads:

The main significance of the Nagpur Plan lies in the fact that it classified roads into four categories on the functional basis. They are: (i) National Highways (ii) State Highways (iii) District Roads and (iv) Village Roads. A brief description of each category is given as under:

1. National Highways*:*

The main roads which are constructed and maintained by the Central Public Works Department (CPWD) are known as the National Highways. These roads are meant for inter-state and strategic defence movements and connect the state capitals, big cities, important ports, big railway junctions and link up with border roads.

The length of National Highways increased from 19,811 km in 1951 to 33,650 km in 1991 and 49,585 km in 1999. Currently, the total length of the National Highways in India is 65,569 kilometres. National Highways form the lifeline of road transport and constitute the framework of road system in India. Although the percentage share of the National Highways to the total road length has decreased considerably from 4.95 per cent in 1951 to only 1.96 per cent in 1999, they carry nearly 40 per cent of the road traffic of India.

Distribution of National Highways:

A number of national highways run across the country in all directions linking important places to one another. The historically important Sher Shah Sun Marg is known as National Highway 1. It links Delhi and Amritsar. National Highway 2 links Delhi and Kolkata. National Highway 3 runs between Agra and Mumbai via Gwalior, Indore and Nasik.

National Highway 7 is the longest one which links Varanasi with Kanniyakumari via Jabalpur, Nagpur, Hyderabad, Bangalore and Madurai. It traverses a distance of 2,325 km. National Highway 5 and 17 run along the eastern and western coasts respectively.

National Highway 15 represents the border road in Rajasthan desert and runs through Kandla, Jaisalmer, Bikaner and joins the border road in the Punjab. Fig. 28.2 shows the important national highways.

Madhya Pradesh (alongwith Chattisgarh) had the largest length of the National Highways (4,994 km) in 1999. This was followed by Uttar Pradesh (4,307 km), Rajasthan (4,081 km), Tamil Nadu (3,681 km), Andhra Pradesh (3,640 km),

Maharashtra (3,626 km) and Karnataka (3,234 km). Small and mountainous state of Sikkim had only 62 km length of National Highway in 1999.

. It is being implemented by the National Highways Authority of India (NHAI). Under this project, about 14,279 km length of National Highways are proposed to be upgraded to 4 or 6 lanes at a total estimated cost of Rs. 65,000 crore (of 2004 prices).

The project has **two Phases, i.e., Phase I and Phase II**. The NHDP consists of the following components.

(i) The Golden quadrilateral (5,846 km) connecting four major cities of Delhi, Mumbai, Chennai and Kolkata.

(ii) The North-South and East-West corridors (7,300 km) connecting Srinagar in the North to Kanniyakumari in the South and Silchar in the East to Porbandar in the West.

(iii) Port connectivity and other Projects (1,133 km).

2. State Highways:

These are constructed and maintained by state governments and join the state capitals with district headquarters and other important towns. These roads are also connected to the national highways. The length of state roadways in India has more than doubled within a span of about three decades and has increased from 56,765 km in 1971 to 1, 37,950 km in 1999. These roads constitute 5.46 per cent of the total road length of India.

Although construction and maintenance of state highways is the responsibility" of the concerned state governments, yet with the revamping of the

Central Road Fund (CRF) in 2000, the Centre provides about Rs. 1,000 crore for development of state roads.

Further, to promote inter-state facilities and also to assist the State Governments in their economic development through construction of roads and bridges, Central Government provides 100 per cent grant for inter-state connectivity and 50 per cent grant for projects of economic importance from CRF. The distribution of State Highways is very uneven. Maharashtra (33,223 km) had the longest length of state highways in 1999. Next to Gujarat (19,796 km), Madhya Pradesh (11,789 km) Rajasthan (10,047 km), and Andhra Pradesh (8,763 km). Smaller states such as Goa and states in hi y areas like Mizoram, Sikkim, Nagaland, Tripura, etc. have less than five hundred km length of State Highways.

3. District Roadways:

These roads join the district headquarters with the other places of the district. Development and maintenance of these roads fall within the purview of Zila Parishads. There has been more than four and half times increase in the length of district roadways from 1, 73,723 km in 1951 to 8 01 ,655 km in 1999.

Maharashtra with 1, 70,269 km district road length is at the top. Following Maharashtra are Uttar Pradesh (1,10,206 km), Madhya Pradesh including Chhattisgarh (85,792 km), Rajathan (62,357 km), Punjab (42,757 km), Karnataka (28,247 km), Assam (26,416 km), Himachal Pradesh (20,772 km), Haryana (19,651 km) and Kerala (18,504 km).

4. Village Roads:

The village roads are mainly the responsibility of village panchayats and connect the villages with the neighbouring towns and cities. These are generally

dusty tracks and are usable only during the lair weather. They become muddy and unserviceable during the rainy season.

Still about 10 per cent of the villages having a population of 1,000 or more and 60 per cent of the villages with less than 1,000 people are not connected by all-weather roads. The network needs expansion and upgradation of existing roads to all- weather roads.

A new thrust was given to village roads when the Pradhan Mantri Gram Sadak Yojna (PMGSY) was launched in December 2000. This is a 100% Centrally Sponsored Scheme to provide rural connectivity to unconnected habitants with a population of 500 persons or more (250 persons in case of hilly, desert and tribal areas) in rural areas by the end of the Tenth Plan period.

Border Roads:

Border Roads Organisation (BRO) Board was set up in May 1960 for accelerating economic development and strengthening defence preparedness through rapid and co-ordinated improvement of roads in the north and north-eastern border areas. This organisation has constructed world's highest road joining Chandigarh with Manali in Himachal Pradesh and Leh in Ladakh.

The Border Roads Organisation has now spread its activities throughout the country and is presently working in states of Rajasthan, Jammu and Kashmir, Himachal Pradesh, Maharashtra, Tamil Nadu, Andhra Pradesh, Uttar Pradesh, Sikkim, Assam, Meghalaya, Nagaland, Tripura, Manipur, Mizoram, Arunachal Pradesh, Bihar and Andaman and Nicobar Islands. It has so far constructed over 24,553 km of roads and surfaced 20,225 km of roads. It is also maintaining about 16,720 km of roads in border areas.

Urban Roads:

A road within the limits of the area of municipality, military cantonment, port or railway authority is called an urban road. There has been a phenomenal growth in urban roads from a meagre 46,361 km in 1961 to 2, 37,866 km in 1999 as a result of accelerated growth in urbanization.

Project Roads:

A road within the limits of the area of a development project of a public authority for the exploitation of resources such as forests, irrigation, hydro-power, coal, sugarcane, etc. is called a project road. Various developmental projects have been undertaken as a result of which the length of project road has increased from 1, 30,893 km in 1971 to 2, 70,523 km in 1999.

International Highways:

The roads which are financed by the World Bank and connect India with neighbouring countries are called international highways. There are two categories of such highways,

(a) The main arterial routes linking the capitals of neighbouring countries. Some of the important routes of this category are (i) the Lahore-Mandalay (Myanmar) route passing through Amritsar-Delhi-Agra-Kolkata-Golaghat- Imphal (ii) Agra-Gwalior-Hyderabad-Bangalore-Dhanushkodi road and (iii) Barhi-Kathmandu road.

(b) Routes joining major cities, ports etc. with arterial network such as: (i) Agra-Mumbai road (ii) Delhi-Multan road (iii) Bangalore-Chennai Road and (iv) Golaghat-Ledo road.

Geographical Distribution of Roads:

The network of roads is more or less similar to that of railways, although former far excels the later with respect to kilometreage. A look at Figure 28.2 and Table 28.14 shows that there are great variations in the distribution pattern of roads in India.

As mentioned earlier, Madhya Pradesh (along with Chhattisgarh) possesses the longest length of National Highways, followed by the Uttar Pradesh, Rajasthan, Tamil Nadu, Andhra Pradesh, Maharashtra and Karnataka. Incidentally these are larger states with high density of population and comparatively advanced stage of industrial growth.

However, length of National Highways passing through a state is not always a true index of economic well being of a state as they serve only the main routes. For example, Madhya Pradesh has longest route length o the national highways and still has some of the most backward areas which are located far away from the main road routes.

The length of state highways could be a better index of road accessibility at the state level. T e picture is slightly different with regard to state highways when compared to that of the national highways.

Maharashtra with 33,223 km long route length is the best served state by the state highways. Gujarat is a distant second with 19,796 km length of state highways. The other states with sufficiently long route length of state highways are Madhya Pradesh Rajasthan, Karnataka Uttar Pradesh and Andhra Pradesh. The northern-eastern states do not have sufficient route length of state highways.

The nature of roads, rather than their total length is more significant from the utility point of view. The largest concentration of roads is found in the Northern Plain, especially in West Bengal and in the Punjab-Haryana plain. But the ratio of surfaced road to the total road length is lower in the Northern Plain than the national average.

For example, Bihar and West Bengal are the two large states in the plain but have only 42.32 per cent and 56.48 per cent of surfaced roads to the total length of roads respectively. Uttar Pradesh with 68.74 per cent of the surfaced roads is in a slightly better position Punjab and Haryana are the two richest states of the country and have 100 per cent and 94.83 per cent of the surfaced roads respectively.

The main cause of small proportion of surfaced roads in the Northern Plain is that it is made up of sand, silt and clay and there is shortage of stone for constructing surfaced roads. In contrast, the proportion of surfaced roads is much higher in the Peninsular plateau area because it is composed of hard rocks and stone for constructing roads is readily available here in plenty Gujarat (93.95%), Maharashtra (79.68%), Goa (61.00%) are some of the states having higher than the national average of 60.33 per cent. Orissa presents an anomaly and is the poorest of all the states where surfaced roads account for less than one third of the total length of roads.

Among the Himalayan states Sikkim with 86.11 per cent is at the top and this is followed by 70.97 per cent in Jammu and Kashmir. All other Himalayan states have surfaced roads less than the national average. Among the union territories, Chandigarh, Dadra and Nagar Haveli, Daman and Diu. Delhi and Lakshadweep have 100 per cent surfaced route. This is followed by 97.47 per cent in Andaman and Nicobar Islands and 77.09 per cent in Pondicherry.

Density of Roads:

A still better index is the density of roads which is defined as the length of roads per 100 sq km of surface area. Eight states and four union territories have over 100 km of road length per 100 sq km of surface area. Kerala with 374.92 km per 100 sq km is at the top.

Since the roads are constructed to serve the people, length of roads per one lakh of population is considered to be the best index of road availability. From this point of view Arunachal Pradesh and Nagaland are the best served states with 1,291.66 and 992.87 km road length per lakh of population respectively. The other very well served states with over 500 km of road length per 1 lakh population are Goa, Mizoram and Orissa.

Assam, Himachal Pradesh, Karnataka, Kerala, Maharashtra Manipur, Meghalaya, Punjab, Rajasthan and Tamil Nadu are also well served states and have road availability above the national average of 240.10 km per 1 lakh population. Some of the least served states are those where the existing road length is less than 100 kms per one lakh of population.

These include the states of Bihar and West Bengal. Among the Union territories, Andaman Nicobar Islands have the longest road length of 369.94 km per one lakh of population, followed by Pondicherry Dadra and Nagar Haweli, Chandigarh, Delhi and Daman & Diu. Lakshadweep with only 1.64 km road length per one lakh population is the least served union territory.

Problems and Prospects:

Road transportation in India faces a number of problems. India s road length of 75.01 km per 100 sq km of area is desperately low as compared to 294.6 km in

Japan, 131.2 km in Austria, 451.8 km in Belgium, 147.2 km in France and 172.2 km in Switzerland Again India has low road length of 240.1 km per one lakh population as against 893.6 in Japan 497.2 in Malaysia 1277.7 in Saudi Arabia, 1392.4 in Austria, 1556 in Hungary, 1572.4 in Sweden, 2494.5 in the USA, 3184.9 m Canada, 4635.4 in Australia and 2705.7 in New Zealand. Lakhs of villages in remote areas are still awaiting a road to reach them.

Another problem is that a little less than half of the roads (40%) are unsurfaced. They can be used only in fair weather and become muddy and unfit for transportation during the rainy season. Efforts need to be made to construct as many surfaced roads as is practically possible.

About 20 per cent of national highways need widening from single to double lanes and 70 per cent of two lane roads have to be strengthened and selected corridors on national highways need conversion into expressways.

The future challenge in road sector revolves around building all-weather roads connecting each and every village to a State Highway or a National Highway. It is imperative to strengthen the road infrastructure for carrying rapidly increasing volumes of agricultural products to the consuming centres in the near future. Rural development is closely associated with road development.

Another very important factor to be considered is the rapidly growing population of motor vehicles and increasing commerce. The number of registered vehicles increased from 306 thousand in 1950-51 to 58,863 thousand in 2001-02, thereby registering about 210 times increase in a span of half a century

Indian Railways:

Railways and roadways are the two means of transport over the land. Roads can be built in the hilly areas also whereas railway lines cannot be laid easily. The railways have advantage over the roadways that they can carry a large number of passengers and large and heavy loads to long distances. Also journey by train is more comfortable than by bus.

India has a large network of railways throughout the country. We have trains from one corner of India to the other corner. Total length of the railway tracks in India is about 63000 kilometers. About 7800 trains carry about eleven million passengers to their destinations every day. Our railway network is the largest in Asia and the second largest in the world. Our goods trains transport about 6 lac tonnes of goods from one place to another daily.

The first railway in India ran in 1853 from Bombay to Thane a distance of 34 km. In less than 150 years we have the largest network of railways in Asia. Indian railways employ about 17 lac people. For administrative convenience Indian railways have been divided into the following nine zones:

1. The Northern Railways
2. The Eastern Railways
3. The Western Railways
4. The Central Railways
5. The Southern Railways
6. The South-Eastern Railways
7. The North-Eastern Railways
8. The North-East Frontier Railways

9. The South-Central Railways

The Indian Railways have **three types of railway tracks:**

1. Broad Gauge
2. Meter Gauge
3. Narrow Gauge

Most of the railway tracks are broad gauge. Broad gauge tracks are 1.69 metre wide. The trains running in the plains use broad gauge tracks. In desert areas and other difficult areas where broad gauge tracks are difficult to be laid, metre gauge tracks are laid. These tracks are one metre wide that is why these tracks are known as metre gauge.

The third type is the narrow gauge. This track is 77 cm. wide. Narrow gauge tracks are laid in the hilly and mountainous areas. Kalka to Shimla, Darjeeling to Siliguri and Mettupalayam to Ooty are narrow gauge tracks. These different kinds of tracks are of great inconvenience. The railways have to make three types of railway engines and railway coaches to run on these rails. The passengers also face inconvenience when they have to shift from broad gauge to another gauge. The railways are trying to convert all metre gauge tracks into broad gauge tracks and some of the tracks have been converted into broad gauge.

The passenger trains are of **four types** depending upon the speed of the trains:

1. Super fast trains
2. Mail trains
3. Express trains
4. Ordinary passenger trains

The people like to travel fast. Therefore some fast moving trains have been introduced. These trains are called superfast trains. These trains run at a speed of 100 km. to 150 km. per hour. Shatobdi

Express, Rajdhani Express are some of the superfast trains. The other fast running trains are the Taj Express, The Pink City Express, Tamil Nadu Express, Himgiri Express, Karnataka Express and Shan-e-Punjab.

Express trains are also fast moving trains. They stop at most of the important stations for the convenience of the passengers. The mail trains are fast running trains. These trains do not stop at smaller stations but stop at all the important stations to collect and deliver mail bags. Passenger trains stop at all the stations. These trains move at a slow speed. Big cities like Delhi, Chennai and Mumbai have local trains. In Calcutta local trains are underground railways known as Metro Railways.

At present the Indian Railways have three types of engines — Steam engines, Diesel engines and the Electric engines. Steam engines are the oldest type of locomotives. These are run by steam and coal. They give out a lot of smoke. These engines are now out-dated. They are being replaced by diesel engines. Diesel engines run on diesel. These engines are more powerful and run faster. They emit lesser smoke. These engines are preferred to the steam engines. Electric engines are still more powerful. They emit no smoke and cause no pollution. These engines run more fast. Most of the superfast trains have electric engines and more tracks are being electrified. All types of railway engines are now manufactured in India at Chittranjan and Varanasi. All types of railway coaches are manufactured at rail coach factories at Perambur and Kapurthala.

Railways have two classes of coaches — First Class and Second Class. First class rail fare is quite high. Second class rail fare is less.

Most of the people travel by second class. Second class coaches are over-crowded. To avoid over-crowding some people get their seats reserved in advance. The reserved class coaches are not over-crowded. For the comfort of the passengers - fans, lights and toilets have been provided in all types of coaches. Some trains have air conditioned coaches attached to them. These coaches keep us warm in winter and cool in summer. There are also two tier and three tier sleeper coaches in the trains. All these facilities have been provided by the railways for the convenience and comfort of the passengers. Some trains have pantry cars.

At the railway stations facilities like waiting halls, waiting rooms, toilet and drinking water are available. Tea, snacks, food, newspapers and magazines are also available at the stalls at the stations.

Importance of Railways:

1. Railways provide the cheapest and most convenient mode of passenger transport both for long distance and suburban traffic.

2. Railways have played a significant role in development and growth of industries. Growth of textile industry in Mumbai, jute industry in areas surrounding Kolkata, coal industry in Jharkhand, etc is largely due to the development of railway network in these areas. Railways help in supplying raw materials and other facilities to the factory sites and finished goods to the market.

3. Agriculture also owes its growth to railways to a great extent. Now farmers can sell their agricultural produce to distant places and even sell them in the world market at remunerative prices.

4. Railways are also helpful in removing isolation between cities and countryside and have played a significant role in disseminating innovations and new ideas.

5. Railways are particularly suited to long distance journey and provide a strong medium of national integration.

6. Railways play a vital role in mitigating the sufferings of the people in the event of natural calamities like droughts, floods, famines, earthquakes, etc. This is done by carrying relief and rescue teams and essential items to the affected areas and save people from sufferings and starvation.

7. Railways also help in facing man-made calamities like social, political, religious disturbances, insurgency, etc. It facilitates easy movement of police, troops, defence equipment, etc. The importance of railways to save the country's freedom and integrity from external aggression has been proved at several occasions.

8. Railways carry the British legacy and connect major ports Jo their hinterlands, thereby lending a helping hand to the overall prosperity of the coastal areas.

9. Introduction of superfast trains and container services in major cities of India have ensured quick movement of men and material.

10. Railways are specially suited to long haulage of bulky materials like coal, petroleum and ores.

Problems of Indian Railways:

Although Indian Railways have progressed a lot, both quantitatively and qualitatively, during the last few years, this system is still plagued by a number of problems which require immediate attention.

A lot has been done, but a lot more is yet to be done. Some of the major problems faced by the Indian Railways are briefly discussed as under:

1. Safety:

With the rapid increase in passenger and goods traffic, the frequency of train accidents is increasing very fast. This has raised serious doubts in the public mind about safety of Rail travel and the general health of the railway network.

2. Cost and Revenue Problems:

Indian Railways face chronic financial crisis. The annual rate of increase in cost has overtaken that of revenues during the last few years.

(i) Low level of employee productivity:

Indian Railways face a serious problem of low level of employee productivity.

(ii) Staff Wages:

With the implementation of the recommendations of the Fifth Pay Commission, staff wages have increased tremendously and have put heavy strain on the financial resources of the Railways.

(iii) Increase in lease charges:

Paucity of funds forces the, Indian Railways to resort to market borrowings which results in increased lease charges..

3. Slowdown in Revenue Growth:

With saturation of trunk routes and low quality of services and reliability, the revenue growth has registered a slowdown.

4. Social Burden:

Indian Railways have to play a dual role of revenue earning as well as meeting the social obligations

5. Other Problems:

A large number of miscellaneous problems include late running of trains, lack of passenger facilities including cleanliness at the railway stations, lack of security arrangement on the railways resulting in theft and dacoities, etc.

Water transport:

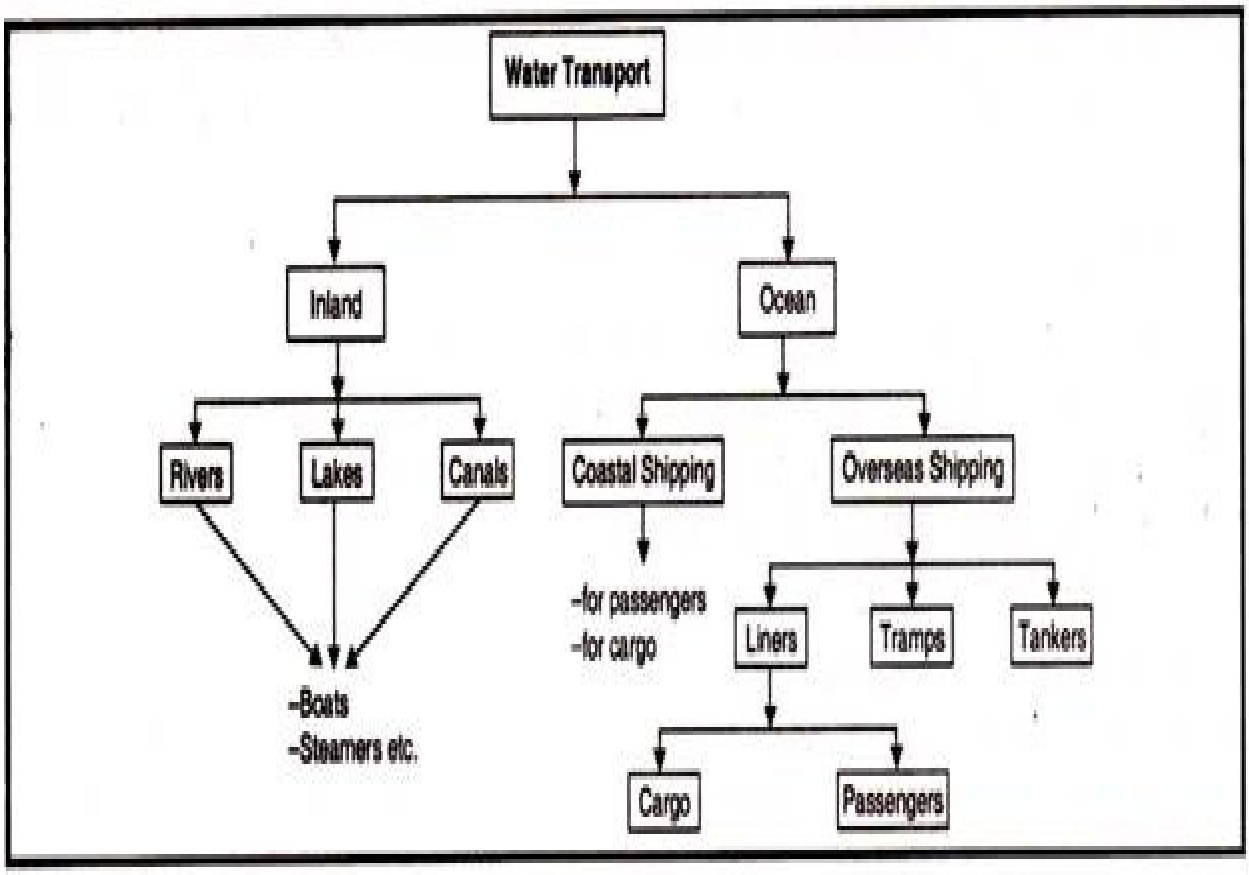
Water transport is the cheapest and the oldest mode of transport. It operates on a natural track and hence does not require huge capital investment in the construction and maintenance of its track except in case of canals. The cost of operation of water transport is also very less. It has the largest carrying capacity and is most suitable for carrying bulky goods over long distances. It has played a very significant role in bringing different parts of the world closer and is indispensable to foreign trade.

Kinds of Water Transport:

Water transport consists of:

(i) Inland water transport

(ii) Ocean-transport



Inland Water Transport:

As shown in the chart, inland water transport consists of transport by rivers, canals and lakes.

Rivers:

Rivers are a natural waterway which can be used as a means of transport. They are suitable for small boats as well as big barrages. River transport played a very important role prior to the development of modern means of land transport. Their importance has gradually declined on account of more reliable and cheaper transport services offered by the railways.

Canals:

They are artificial waterways made for the purpose of irrigation or navigation or both. Canal transport requires a huge amount of capital investment in

construction and maintenance of its track i.e., the artificial waterways. The cost of the canal transport is, therefore, higher than that of river transport.

Lakes:

Lakes can be either natural like rivers or artificial like canals.

Advantages:

1. Low Cost:

Rivers are a natural highway which does not require any cost of construction and maintenance. Even the cost of construction and maintenance of canals is much less or they are used, not only for transport purposes but also for irrigation, etc. Thus, it is the cheapest mode of transport for carrying goods from one place to another.

2. Larger Capacity:

It can carry much larger quantities of heavy and bulky goods such as coal, and, timber etc.

3. Flexible Service:

It provides much more flexible service than railways and can be adjusted to individual requirements.

4. Safety:

The risks of accidents and breakdowns, in this form of transport, are minimum as compared to any other form of transport.

Disadvantages:

1. Slow:

Speed of Inland water transport is very slow and therefore this mode of transport is unsuitable where time is an important factor.

2. Limited Area of Operation:

It can be used only in a limited area which is served by deep canals and rivers.

3. Seasonal Character:

Rivers and canals cannot be operated for transportation throughout the year as water may freeze during winter or water level may go very much down during summer.

4. Unreliable:

The inland water transport by rivers is unreliable. Sometimes the river changes its course which causes dislocation in the normal route of the trade.

5. Unsuitable for Small Business:

Inland water transport by rivers and canals is not suitable for small traders, as it takes normally a longer time to carry goods from one place to another through this form of transport.

Ocean transport:

Ocean transport is indispensable for foreign trade. It has brought the different parts of the world closer and has knitted together all the nations of the world into one big world market. It operates on a natural track, i.e., the sea and does not require any investment in the construction and maintenance of its track. It is, obviously, the cheapest mode of transport.

Ocean transport includes:

1. Coastal Shipping
2. Overseas Shipping

1. Coastal Shipping:

It is one of the most important means of transport for carrying goods from one part to another in a country. It is a cheaper and quicker mode of transport and

is most suitable for carrying heavy, bulky and cheap traffic like coal, iron ore, etc. to distant places. But it can serve only limited areas

2. Overseas Shipping:

There are three types of vessels employed in the overseas shipping:

(i) Liners,

(ii) Tramps,

(iii) Tankers.

(i) Liners:

Liners are the ships which have regular fixed routes, time and charges. They are, usually, a collection of vessels under one ownership, i.e., a fleet.

(ii) Tramps:

Tramps are ships which have no fixed routes. They have no set rules or rate schedule. Usually, they do not sail till they have full cargo. They can be chartered by exporters and are ready to sail anywhere and at any time. They are not as fast in speed as liners. Tramps are more suitable to carry seasonal and bulky goods.

(iii) Tankers:

Tankers are the vessels which are specially designed to carry oil, petrol and such other liquids. They have a large capacity, 2 to 3 lakh tons of oil, and very shortly, we may have super tankers with a capacity of about 10 lakh tons of oil.

Air transport:

Air transport plays a vital role in times of emergency as well as in the event of natural and man-made calamities like floods, famines, epidemics and wars. Air transport is very essential for a vast country like India where distances are so large and the terrain and climatic conditions so diverse.

The weather conditions in India are also quite congenial to air transport. Poor visibility due to clouds, fog and mist hinders air transport but India is lucky to have clear weather for most part of the year except for a short duration in rainy season.

Air transportation in India made a humble beginning in 1911 when air mail operation commenced over a little distance of 10 km between Allahabad and Naini. The British, French and Dutch introduced air transport in 1929-30.

Indian National Airways was formed in 1933 and it introduced air service between Karachi and Lahore. By the end of the World War II, major cities like Karachi, Mumbai, Delhi, Kolkata, Lahore and some other places were provided with air services.

At the time of partition of the country in 1947, there were four companies namely Tata Sons Ltd./Air India, Indian National Airways, Air Services of India and Deccan Airways. By 1951, four more companies' viz. Bharat Airways, Himalayan Aviation Ltd., Airways India and the Kalinga Airlines also came up. In 1953, the air transport was nationalised and two corporations were formed: Air India International and the Indian Airlines.

The face of Indian aviation is changing and is poised for a vibrant growth". India can definitely boast of a boom in air travel. Economic liberalisation has totally changed the outlook of a perspective air passenger. Now, he thinks in terms of time and gone are the days when he used to ponder over advantages and disadvantages of air travel.

At present, the civil aviation is managed on the following pattern.

1. Air India is responsible for international air services. It operates from international airports at Delhi, Mumbai, Kolkata, Chennai, Thiruvananthapuram, Bangalore, Hyderabad, Panaji, Kochi, Amritsar, Guwahati and Ahmedabad. It connects India with almost all the continents of world through its services. Its main services are to the USA, Canada, Europe, the Russian Confederation, the Gulf/Middle East, East Asia, Far East, Africa and Australia.

2. Indian Airlines handles domestic traffic and carries passengers, cargo and mail to different places in the country. It also provides services to 12 countries, viz., Pakistan, Maldives, Nepal, Sri Lanka, Malaysia, Bangladesh, Thailand, Singapore, U.A.E., Oman, Myanmar and Kuwait. Its operations cover 69 destinations including 15 abroad. The current projections indicate additional aircraft requirements for replacement of ageing aircraft as well as for growth.

3. Vayudoot was set up in 1981 to augment the air transport in the country. It provided links with remote and inaccessible areas which were not covered by Indian Airlines. It commenced its services in February, 1981. The Government had initially approved air services to 14 stations in the North-Eastern region. Subsequently, 23 stations outside this region were added for linking by Vayudoot.

4. Pawan Hans Limited was established in 1985. It provides helicopter services to the petroleum sector including ONGC, Oil India Ltd. and Enron Oil and Gas, Mumbai High and connects remote and inaccessible areas.

Private Sector:

Private taxis started their services in 1990 and played feeder role to Indian Airlines. Currently five companies are providing air services in India: Out of these,

Jet Airways and Air Sahara are operating on domestic as well as international air routes while Air Deccan, Kingfisher and Spiciest are operating on domestic routes only. Together they have a fleet of about 100 aircraft and undertake more than 500 flights per day. Six more airlines are waiting in the wings.

There are around 449 airports/airstrips in the country in various stages of development. Of these, 314 are considered serviceable but only 81 airports are in operation. The top six airports account for 70 per cent of the domestic air traffic while top 25 airports account for more than 90 per cent of air traffic. In cargo, the top in airports account for about 87 of the total traffic. Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Thiruvananthapuram, Amritsar, Kochi, Ahmedabad, Panaji and Guwahati have one international airport each

International Airports Authority of India and National Airports Authority were merged on 1 April, 1995 to form Airports Authority of India (AAI). This authority is responsible for providing safe an efficient air traffic services and aeronautical communication services for effective control of air traffic in the Indian air space.

The improvement of infrastructure at the airports needs heavy capital investment which the government cannot afford of its own. Therefore, private domestic and foreign investors including NRIs have been encouraged to participate in the process of improvement. Improvement and modernization of Indira Gandhi International Airport at Delhi and Shivaji Maratha International Airport at Mumbai are the latest examples of this type.

Public Sectors in India: Role, Growth and Problems:

Prior to 1947, there was virtually no "public sector" in India. The only instances worthy of mention were the Railways, the Posts and Telegraphs, the Port Trusts, the Ordnance and Aircraft Factories and a few state managed undertakings like the Government Salt factories, Quinine factories, etc.

The idea that economic development should be promoted by the State actually managing industrial concerns did not take root in India before 1947, even though the concept of planning was very much discussed by Congress Governments in the Indian provinces as far back as 1931. However, in the post independence period, the expansion of public sector was undertaken as an integral part of the Industrial Policy 1956.

Central Public Sector Undertakings:

There were 236 Central public sector undertakings excluding banks in 1996-97. The growth of investment in Central public sector undertakings has also increased. Since 1951, the number of industrial and commercial undertakings of the Central Government has increased from 5 units in 1950-51 to 236 units in 1996-97 and the Capital investment has increased from Rs. 29 crores to Rs. 2020.2 billion in 1996-97.

State Governments Public Enterprises:

As on March 31, 1986, there were 636 State level Public Enterprises (SLPEs) functioning in 24 states. The investment in SLPEs as on March 31, 1986, was of the order of Rs. 10,000 crores as against. Rs. 2,860 crores, as on Mach 31, 1977.

While inclusive of State Electricity Boards and State Road Transport Corporations total investment stood at Rs. 25,000 crores in 1986, as against Rs. 9,576 crore in 1977. The average rate of growth of investment in State level enterprises during 1977-86 period was of the order of 20 percent per annum.

Organizationally, there are four types of public sector enterprises:

(1) Departmentally Managed;

(2) Managed by independent boards;

(3) Run as public corporations; and

(4) Organised as Companies. The company form of organisation is the most common.

Role of Public Sector in India:

After the attainment of independence and the advent of Planning, there has been a progressive expansion in the scope of the Public Sector. The passage of Industrial Policy Resolution of 1956 and the adoption of the Socialist Pattern of Society as our national goal, further led to deliberate enlargement of the role of public sector.

To understand the role of the Public Sector, we must have an idea about its size in the context of the Indian economy. For a comprehensive view of the entire Public Sector, we should cover besides autonomous corporations, the departmental enterprises.

While doing so, not only the enterprises owned and run by the Central Government be covered but the enterprises run by the State Governments and local bodies should also be included.

Secondly, it would not be appropriate to use any single measure to estimate the size of the public sector; rather it would be desirable to use quite a few indicators, e.g., employment, investment, value of output, national income generated, savings, capital formation and capital stock.

Share in National Income:

An important contribution to the National Income is Public Sector. During the period 1960 to 1999, the public sector has doubled its share in the national income in real terms and account for 25 percent of the total income of the economy. This is, undoubtedly, a significant change in the structure of economy in terms of the increased importance of the public sector in domestic activity.

Share in Capital Formation:

Another most important contribution of public sector in India has been in respect of capital formation. Investment in the private sector producing goods for rich people mainly should be evaluated lower than similar type of investment in the public sector which is engaged in the provision of essential infrastructural services to the economy as a whole. This is true even though the commercial profitability of the private sector is being rated high.

Share of Public Sector in Total Investment:

Plan	Percentage
II Plan	54.6
III Plan	63.7
IV Plan	60.3
V Plan	57.6
VI Plan	52.9
VII Plan	47.8
VIII Plan	36.5
IX Plan	33.4

The above table shows the investment in this sector is that after having reached the peak during the third plan, the share of public sector, in total investment in each of the plans has however, been on the decline.

Growth of Ancillary Industries:

Public Sector enterprises are helping the growth of ancillary industrious in numerous ways. These are as follows:

(1) They take responsibility for providing managerial and technical guidance on production process and equipment selection etc.

(2) Public Sector enterprises give long-term contracts to small ancillary industries.

(3) Public enterprises guide for sources of financing and procedure for obtaining them.

(4) Public enterprises have made efforts to purchase items from ancillary units.

Problems in Public Sector:

Even though the public sector is going in a correct path, some problems and short comings are there. The main short comings are as follows:

(1) Heavy losses.

(2) Influence of political factors.

(3) Work delays.

(4) Over-capitalisation.

(5) Pricing policy.

(6) Use of Manpower Resources.

(7) Control over employees.

(8) Inefficient Management.

(9) Higher capital intensity leading to lower-employment generation.

(10) Capacity utilisation.

Suggestions to Improve the Performance of Public Sector Enterprises (PSEs):

(i) Controlling the cost at every level of public sector enterprises.

(ii) Increase the production,

(iii) Reforms in capital base.

(iv) Increase the standard of public sector enterprises to manage the competition from both domestic and foreign competitors.

(v) Identifying redundant manpower and dealing with it through means a retraining, redeployment and encouraging self-employment etc.

Growth of Public Sector:

Since 1956, there has been an impressive growth of the public sector enterprises. Both the Central and State Governments have set up industrial enterprises for production of both goods and services.

The amount of investment in public sector enterprises has been rapidly increasing. The growth of public enterprises started by the Central Government can be observed from Table 37.1.

Role of Private Sector in India:

India is a capitalistic biased mixed economy. It is needless to say, what important role private sector plays for the economic development of the country.

Contributions of Private Sector are listed below:

1. Most Important Sector:

In-spite of huge progress of the public sector during the plan period, the importance of private sector is tremendous in the India economy. On the basis of the latest data available for the country's industrial development as given in the table -1, the number of private sector companies in 2001- 02 was 1, 10, 634 in

compare to the total number companies of 1,28,549. In other way 86.1% of the total companies were under the control of private sector in compare to only 11.67o companies under public sector.

Table 1: Ownership of Factories, 2001-02

Sector	*Factories Number*
Public Sector	14,947
	(11.6)
Joint Sector	2,048
	(1.6)
Private Sector	1, 10,634
	(86.1)
Other	920
	(0.7)
Total	**1, 28,549**
	(100.0)

2. Employment Generation:

Private sector plays a dominant role for generating employment opportunities inside the country. A huge number of large scale, small scale, cottage scale units are under the control of private sector. It proves that small scale and cottage scale industries contribute four times more employment in compare to large scale industries. According to 2001-02 statistics, as far as employment is concerned, the share of private sector was 51.2% against 44.3% of the public sector. This is shown in the table 2.

Table 2: Number of Employment Generation.

Sector	*Employment (Thousand)*
Public Sector	3,430
	(44.3)
Joint Sector	309
	(4.0)
Private Sector	3,965
	(51.2)
Other	46
	(0.6)
Total	**7,750**
	(100.0)

3. Helpful for Development:

According to Schumpeter peter private sector plays a dominant role in economic development. It enhances the process of industrialisation. All the private entrepreneurs are worked for profit motive. They actually played a leading role for the introduction of new commodities, new techniques of production, new plants equipment's and machineries. Private entrepreneur has innovative ideas and always modifies the total method of production. After the introduction of new industrial policy in 1991, private sector leads a vital role in country's industrial development.

4. Contribution to Agriculture:

India is an agro based economy. The share of agriculture and its allied activities like fishing, poultry, cattle rearing, animal husbandry, dairy farming etc. to the national income is nearly 22%. On the other hand, about 60% of the total

working population is engaged in this area. Hence, this large agriculture sector is controlled by the private sector.

5. Contribution to Industry:

According to 1956 resolution, "industries producing intermediate goods and machines can be set up in the private sector." A good number of ultra modern industries are constructed under the control of private sector. This includes several consumers' good industries like sugar industry, edible oil industry, textile industry, paper industry, spice industry and fast food or semi-finished food industries.

Even in the sphere of capital goods, iron and steel heavy engineering, chemical, motors etc. private sector plays a dominant role for their development. In the post liberalisation phase (after introduction of New Industrial Policy, 1991), the working of few private industries became huge. Table 3, shows the net sales of 10 top giant private sector industries in India during 2004.

Table 3: Top Ten private sector companies in 2004 (Net Sales)

Company	*Net Sales (2004) (Rs. crore)*
1. Reliance Industries	70,196
2. Tata Motor	13,654
3. Tata Steel	11, 129
4. Larsen and Turbo	10,849
5. Hindustan Lever	10,837
6. Maruti Udyog	9,426
7. Adani Export	8,921
8. Hindal Co.	8,196
9. IPCL	8,070
10. Sterline industries	7,699

6. High Potentiality:

Most of the small scale and cottage scale industries are using labour intersine technologies, they create huge employment opportunities. These industries are owned by private sector. About 80% of the total working forces are employed in either organized or unorganized private sector units. Private sector contributes about three-forth of the country's national income. Moreover, this sector also plays a vital role to increase gross domestic saving (CDS) and gross domestic capital formation'(GDCF) within the economy.

Considering the importance of the private sector, the Government has been undertaking various supporting measures for promotion and development of this sector. But as this sector is mostly guided by the profit motive and have little consideration about the national and social goals, thus the Government has enacted various legislative measures for the control and regulations of the private sector during the last four decades. But too much control and regulations imposed on the private sector has resulted in a lot of hurdles on the path of their development leading to a slow rate of growth of the economy.

Realizing this problem, the Government has introduced the policy of economic liberalization for the uninterrupted growth of the private sector through the announcement of new and liberal industrial policy in 1991 and also introduced some other industrial policy reforms in the subsequent years.

Development Banking in India

In the field of industrial finance, the concept of development bank is of recent origin. In a country like India, the emergence of development banking is a post-independence phenomenon. In the Western countries, however, development banking had a long period of evolution. In 1920, Japan established the Industrial Bank of Japan to cater to the financial needs of her industrial development. In the post-war era, the Industrial Development Bank of Canada (1944), the Finance Corporation for Industry Ltd. (FCI) and the Industrial and Commercial Finance Corporation Ltd. (ICFC) of England (1945), etc., were established as modern development banks to provide term loans to industry. In 1966, the U.K. Government set up the Industrial Reorganization Corporation (IRC). In India, the first development bank called the Industrial Finance Corporation of India was established in 1948.

Definition of Development Bank:

Fundamentally a development bank is a term lending institution.

Development bank is essentially a multi-purpose financial institution with a broad development outlook. A development bank may, thus, be defined as a financial institution concerned with providing all types of financial assistance (medium as well as long term) to business units, in the form of loans, underwriting, investment and guarantee operations, and promotional activities — economic development in general, and industrial development, in particular.

In short, a development bank is a development- oriented bank.

Features of a Development Bank:

Following are the main characteristic features of a development bank:

1. It is a specialized financial institution.

2. It provides medium and long term finance to business units.

3. Unlike commercial banks, it does not accept deposits from the public.

4. It is not just a term-lending institution. It is a multi-purpose financial institution.

5. It is essentially a development-oriented bank. Its primary object is to promote economic development by promoting investment and entrepreneurial activity in a developing economy. It encourages new and small entrepreneurs and seeks balanced regional growth.

6. It provides financial assistance not only to the private sector but also to the public sector undertakings.

7. It aims at promoting the saving and investment habit in the community.

8. It does not compete with the normal channels of finance, i.e., finance already made available by the banks and other conventional financial institutions. Its major role is of a gap-filler, i. e., to fill up the deficiencies of the existing financial facilities.

9. Its motive is to serve public interest rather than to make profits. It works in the general interest of the nation

Role of Industrial Financial Corporation of India (IFCI)

India is a developing economy. But the progress of industry is very slow. This is mainly due to the non-availability of finance. Hence, the supply of adequate finance is required for the development of industries in India. Our National Government is fully aware of the said problem. Accordingly, various agencies have been set up for the supply of industrial finance to the public and private limited companies. One such agency is the Industrial Finance Corporation.

Establishment of Industrial Finance Corporation of India

In 1948, the Government of India set up Industrial Finance Corporation of India (I.F.C.I) with a view of providing medium and long term finance to industries.

The Industrial Finance Corporation started with the authorized share capital of Rs. 10 crores divided into 20,000 share of Rs. 5,000 each. It can also issue bonds up to five times of its paid up capital. The Corporation is authorized to borrow from the Reserve Bank of India, the Central Government and the World Bank, in order to increase its resources.

Functions

The Industrial Financial Corporation of India is authorized to grant loans to industrial companies repayable with twenty five years grants, loans in foreign currency to certain industries, under write bonds, shares and debentures etc. provided they are disposed of by the I.F.C.I. within seven years, guarantee deferred payments by importers of capital goods of foreign manufacturers, accept deposit from the local institution, guarantee loans from any bank of a foreign country, subscribe shares of industrial companies.

The corporation's role now extends to the entire industrial spectrum in the country. The facilities and services being provided by IFCI can be deemed to fall broadly under (a) project finance, (b) financial services and (c) promotional services.

The Industrial Finance Corporation has played a vital role in our industrial economy. Since its inception, the Corporation has provided financial assistance to

the underdeveloped industrial concerns. The Corporation has the power to examine the financial aspects of the industrial companies and give valuable advice to the management for improving their schemes.

I.F.C.I. has launched promotional schemes like

- Subsidy in interest for women entrepreneurs
- Schemes for modernization of small scale industrial units,
- Consultancy fee subsidy for providing marketing assistance,
- Pollution control schemes etc.

It is also diversifying its activities in the field of merchant banking to render other financial services like project counseling, sanction of loans etc. I.F.C.I. is also showing concern for the development of backward districts of the country.

Criticism

But the Industrial Finance Corporation is not free from criticisms.

1. The Corporation has mainly favored the big companies and has neglected small and medium concerns.
2. The Industrial Finance Corporation is not authorized to sanction more than two crores of rupees to many industrial concerns.
3. The Corporation may grant advances or loans only if the Central Government is ready to repay the principal with interest.
4. The I.F.C.I. lack administrative efficiency. The members are not properly trained and acquainted with the problems of industrial finance.
5. The Corporation has a bias toward the more developed industrial companies.
6. It has been reported that the I.F.C.I. unusually delays in granting loans. It is changed with nepotism and favoritism.

Conclusion

Thus it has been suggested that steps should be taken to improve the administrative machinery of the Corporation and also to increase its financial resources. The Industrial Finance Corporation has to see that all States in India receive financial aid from it on a sound economic basis.

Industrial Credit and Investment Corporation of India or ICICI

Establishment

The Industrial Credit and Investment Corporation of India or ICICI was established on 5th January, 1955 to assist industrial units in the private sector. It was sponsored by the World Bank.

Objects

The primary object of ICICI is to assist industrial units in the private-sector. The main objects of ICICI are as follows:

- To assist in the creation, expansion and modernization at industrial units in the private sector.
- To encourage the inflow and participation of foreign capital in the private sector industrial units.
- To expand the investment market in India.

Functions

The main functions of ICICI are as follows:

- To sponsor and underwrite new issues.
- To provide medium and long-term loans to industrial units in the private sector.
- to guarantee loans taken from other private sources.

- to furnish managerial, technical and administrative advice to industrial units by the private sector.
- To make funds available for reinvestment.
- To advance loans in foreign currency towards the cost of imported capital equipments.
- to extend guarantee for deferred payments.
- To purchase the shares and debentures of new companies.

Management

The ICICI is managed by a board of 11 directors out of whom 7 directors are elected by Indian shareholders, 2 by British shareholders, 1 by American shareholders and the remaining is nominated by Government of India; It has a full-time chairman and a general manager.

Financial Resources (Capital):

The authorized capital of ICICI is Rs. 25 crores which was raised to Rs. 60 crores. The present subscribed capital is Rs. 22 crores. The capital has been subscribed by (i) Indian banks and insurance companies, (ii) general public in India, (iii) foreigners including British and American investors.

Loans

The ICICI is empowered to accept foreign currency loans. Loan provided by the World Bank is dominating feature. Besides World Bank loan, the ICICI is also obtaining loans from IDBI, IBRD, AID and KFW of the Federal Republic of Germany, America and Britain and also from Government of India.

Review of Progress (Operations)

The ICICI has a commendable record of assistance to industrial units in the private sector. The main industries getting financial assistance from ICICI includes pulp paper, chemicals, electrical equipments automobiles and cycles, machinery

manufacturing industries, cotton textiles, sugar and cement etc. The assistance has been provided in the form of rupee loans, foreign currency loans, guarantees and underwriting and direct subscription securities. The performance of the merchant banking division of ICICI is excellent.

Critical Evaluation

No doubt that the ICICI, since its inception, has been rendering valuable services to private-sector industries. It has developed and strengthened underwriting market, an important branch of our capital market. It has assumed great importance as a supplier of foreign currency loans to industrial units in the private sector. Further, it has developed vast associations in foreign countries.

In spite of the progress made by the ICICI in different economic fields, it is subject to criticism on the following grounds:

- The ICICI has adopted an indifferent attitude towards providing assistance in backward regions of the country.
- The gap between loans sanctioned and disbursed is quite wide.
- It has failed to take necessary interest in the development of rural economy of our country.

In spite of the above criticisms, the overall performance of ICICI in financing the private sector industrial units is commendable. It has started taking interest in the economic development of rural and backward areas of our country. Thus, the future of ICICI in India is quite bright.

Industrial Development Bank of India (IDBI)

Industrial Development Bank of India (IDBI) established under Industrial Development Bank of India Act, 1964, is the principal financial institution for

providing credit and other facilities for developing industries and assisting development institutions.

Till 1976, IDBI was a subsidiary bank of RBI. In 1976 it was separated from RBI and the ownership was transferred to Government of India. IDBI is the tenth largest bank in the world in terms of development. The National Stock Exchange (NSE), the National Securities Depository Services Ltd. (NSDL), Stock Holding Corporation of India (SHCIL) are some of the Institutions which has been built by IDBI.

Organization and Management:

IDBI consist of a Board of Directors, consisting of a chairman and Managing Director appointed by the Government of India, a Deputy Governor of the RBI nominated by that bank and 20 other Directors are nominated by the Central Government.

The board had constituted an Executive Committee consisting of 10 Directors, including the Chairman and Managing Director. The executive committee is empowered to sanction financial assistance.

The Head office of IDBI is located in Mumbai. The bank has five regional offices, one each in Kolkata, Guwahati, New Delhi, Chennai and Mumbai. Besides the bank have 21 branch offices.

Objectives and Functions of IDBI

Objectives:

The main objectives of IDBI are to serve as the apex institution for term finance for industry in India. Its objectives include:

- Co-ordination, regulation and supervision of the working of other financial institutions such as IFCI, ICICI, UTI, LIC, Commercial Banks and SFCs.
- Supplementing the resources of other financial institutions and there by widening the scope of their assistance.
- Planning, promotion and development of key industries and diversification of industrial growth.
- Devising and enforcing a system of industrial growth that conforms to national priorities.

Functions:

The IDBI has been established to perform the following functions-

- To grant loans and advances to IFCI, SFCs or any other financial institution by way of refinancing of loans granted by such institutions which are repayable within 25 year.
- To grant loans and advances to scheduled banks or state co-operative banks by way of refinancing of loans granted by such institutions which are repayable in 15 years.
- To grant loans and advances to IFCI, SFCs, other institutions, scheduled banks, state co-operative banks by way of refinancing of loans granted by such institution to industrial concerns for exports.
- To discount or re-discount bills of industrial concerns.
- To underwrite or to subscribe to shares or debentures of industrial concerns.
- To subscribe to or purchase stock, shares, bonds and debentures of other financial institutions.
- To grant line of credit or loans and advances to other financial institutions such as IFCI, SFCs, etc.

- To grant loans to any industrial concern.
- To guarantee deferred payment due from any industrial concern.
- To guarantee loans raised by industrial concerns in the market or from institutions.
- To provide consultancy and merchant banking services in or outside India.
- To provide technical, legal, marketing and administrative assistance to any industrial concern or person for promotion, management or expansion of any industry.
- Planning, promoting and developing industries to fill up gaps in the industrial structure in India.
- To act as trustee for the holders of debentures or other securities.

IDBI Assistance:

The IDBI provides financial assistance either directly or through some specified financial institutions:

(i) Direct Assistance:

The IDBI grants loans and advances to industrial concerns. There is no restriction on the upper or lower limits for assistance to any concern itself. The bank guarantees loans raised by industrial concerns in the open market from the State Co-operative Banks, the Scheduled Banks, the Industrial Finance Corporation of India (IFCI) and other 'notified' financial institutions.

(ii) Indirect Assistance:

The IDBI can refinance term loans to industrial concerns repayable within 3 to 25 years given by the IFCI, the State Financial Corporation and some other financial institutions and to SIDCs (State Industrial Development Corporations), Commercial banks and Cooperative banks which extend term loans not exceeding

10 years to industrial concerns. IDBI subscribes to the shares and bonds of the financial institutions and thereby provide supplementary resources.

Developmental Activities of IDBI:

(1) Promotional Activities:

In fulfillment of its developmental role, the bank continues to perform a wide range of promotional activities relating to developmental programmes for new entrepreneurs, consultancy services for small and medium enterprises and programmes designed for accredited voluntary agencies for the economic upliftment of the underprivileged.

These include entrepreneurship development, self-employment and wage employment in the industrial sector for the weaker sections of society through voluntary agencies, support to Science and Technology Entrepreneurs' Parks, Energy Conservation, Common Quality Testing Centers for small industries.

(2) Technical Consultancy Organizations:

With a view to making available at a reasonable cost, consultancy and advisory services to entrepreneurs, particularly to new and small entrepreneurs, IDBI, in collaboration with other All-India Financial Institutions, has set up a network of Technical Consultancy Organizations (TCOs) covering the entire country. TCOs offer diversified services to small and medium enterprises in the selection, formulation and appraisal of projects, their implementation and review.

(3) Entrepreneurship Development Institute:

Realizing that entrepreneurship development is the key to industrial development; IDBI played a prime role in setting up of the Entrepreneurship Development Institute of India for fostering entrepreneurship in the country. It has

also established similar institutes in Bihar, Orissa, Madhya Pradesh and Uttar Pradesh. IDBI also extends financial support to various organizations in conducting studies or surveys of relevance to industrial development.

Information technology in India:

Information technology in India is an industry consisting of two major components: IT Services and business process outsourcing (BPO). The sector has increased its contribution to India's GDP from 1.2% in 1998 to 7.5% in 2012. According to NASSCOM, the sector aggregated revenues of US$100 billion in 2012, where export and domestic revenue stood at US$69.1 billion and US$31.7 billion respectively, growing by over 9%.

Information technology is playing an important role in India today & has transformed India's image from a slow moving bureaucratic economy to a land of innovative entrepreneurs.

The IT sector in India is generating 2.5 million direct employment.India is now one of the biggest IT capitals of the modern world and all the major players in the world IT sector are present in the country.

Recent development

The economic effect of the technologically inclined services sector in India—accounting for 40% of the country's GDP and 30% of export earnings as of 2006, while employing only 25% of its workforce—is summarized by Sharma (2006): "Today, Bangalore is known as the Silicon Valley of India and contributes 33% of Indian IT Exports. India's second and third largest software companies are headquartered in Bangalore, as are many of the global SEI-CMM Level 100 Companies . Numerous IT companies are based in Mumbai, such as TCS (among

India's first and largest), Reliance, Patni, LnT Infotech, Myzornis Corporation and i-Flex.

Thiruvananthapuram (Trivandrum), the capital of Kerala state, is the foremost among the Tier II cities that is rapidly growing in terms of IT infrastructure. As the software hub of Kerala, more than 80% of the state's software exports are from here. Major campuses and headquarters of companies such as Infosys, Oracle Corporation, IBS Software Services and UST Global are located in the city. India's biggest IT company Tata Consultancy Services is building the country's largest IT training facility in Trivandrum—the project is worth INR10 billion and will have a capacity of 10,000 seats. The completion of the facility is expected in 2014 or 2015.

On 25 June 2002, India and the European Union agreed to bilateral cooperation in the field of science and technology. A joint EU-India group of scholars was formed on 23 November 2001 to further promote joint research and development. India holds observer status at CERN, while a joint India-EU Software Education and Development Center will be located in Bangalore.

Major IT Hubs

Rank		Description
1	Bangalore	Popularly known as the Silicon Valley of India and IT

		Capital of India. Bangalore is considered to be a global information technology hub and largest software exports from India. The top Indian IT service providers like Infosys and Wipro are headquartered in Bangalore, It is also country headquarters to many top firms like Intel, Texas Instruments, Bosch, Continental and many more, Bangalore alone consists of more than 35 percentage of all the IT companies present in India and contains close to 5000 companies making it the largest IT contributor in India.
2	Hyderabad	Hyderabad is the major IT hub in India. It has become the first destination for the Microsoft development centre in India and largest software development centre outside of their headquarters in Redmond, Washington. It is also known as Cyber city which consists of many Multinational corporation companies such as Cognizant, TCS, Infosys, Wipro etc., together called Hitech City. and is the BPO hub of India
3	Chennai	Chennai is the third largest exporter of IT and ITES of India. Almost all companies have their backup operations in Chennai. Cognizant, a major global IT service company has its Indian operations' head office in Chennai.
4	Delhi	The National Capital Region comprising Delhi, Gurgaon and Noida are clusters of software development.

5	Mumbai	The Financial capital of India, but recently many IT companies have established offices.
6	Pune	Major Indian and International Firms present in Pune. Pune is also C-DAC headquarters.
7	Kolkata	The city is a major back-end operational hub for IBM, Deloitte.
8	Coimbatore	Proudly called as "Manchester of South India", Coimbatore is one of the fastest emerging IT hub and developing cities of India. Coimbatore has major IT companies like Cognizant, Wipro, Robert Bosch, HCL Technologies, DELL, Exterro, Tata Consultancy Services. It also hosts the training center of Cognizant. There are many other IT majors which have planned to start the operations soon.
9	Bhubaneswar	The capital city of Odisha, an emerging IT and education hub, is one of India's fastest developing cities.
10	Thiruvananthapuram	The capital of Kerala, now houses all major IT companies including Oracle, TCS, Infosys, and contributes in IT export of India.
11	Kochi	The commercial capital of Kerala, now houses all major IT companies including TCS, Cognizant, and contributes in IT export of India.

The Indian IT market currently focuses on providing low cost solution in the services business of global IT. Presence of Indian companies in the product development business of global IT is very meagre, however, this number is slowly on the raise. US giants that outsource work to India, do not allocate the high end SDLC (Software Development Life Cycle) processes like requirement analysis, high level design and architectural design, although some Indian IT players have enough competency to take up and successfully complete these high level software jobs. The other prominent trend is, IT jobs, that were earlier confined to Bangalore, are slowly starting to experience a geographical diffuse into other cities like Chennai, Hyderabad and Pune. The growth is not fast paced, this, can be largely attributed to the lethargic attitude of the government in providing proper telecommunication infrastructure. The penetration levels are higher for mobile, but, the speed at which the backbone infrastructure works (network speed) and the coverage it offers are far below what other countries of the world have currently in offer.

The Indian Advantage

The above listed views might possibly work against India's' dream to become the biggest contributor to world IT business, but, if there is one factor that is particular only to India, and, the one that can nullify all negative factors lined up against it, would be, the volume of young, English speaking talent pool that India has got to offer. This number far exceeds, any other country can generate in the coming years. It cannot be denied that China is gearing up to reduce the English fluency gap, but, at the same time, doing it with ease like India, is a topic of discussion.

The information technology (IT) and information technology enabled services (ITeS) industry has been one of the key driving forces fuelling India's economic growth.

Recently NASSCOM reported that IT and ITES sector in India, annually grows at the rate of about 25% and sustains nearly 2 million jobs. Indian IT - ITES sector is its flagship economy builder and every single rupee spent by IT-ITES sector accounts for two rupees in Indian economy.

The Information Technology - Information Technology Enabled Services sector is fast changing overall Indian business standards. In addition, every job created in IT-ITES sector accounts for creation of four jobs in rest of the economy. That is very giant leap by Indian economy, thanks to the IT-ITES sector. IT-ITES sectors include companies from software development, consultancies, BPO (business process outsource), software management and online services. These are fastest growing industries and are favorites among the new graduates and students. Career in IT-ITES Sector is very lucrative and one can attain high success in this versatile and vast field.

Scope of IT-ITES industry in India

There is very bright scope for IT-ITES industry as it is strongest industry sector in India. Today the exports for the IT-ITES sectors are growing with increasing rate and the overall global market is very healthy. If one needs to know what the scope of IT-ITES sector is, just have a look at the quarter end financial results of the IT-ITES sector. The reports are outstanding and it seems that the rise of the IT industry is not going to stop so easily.

Recently, economic survey revealed that IT-ITES sector created almost 3 million additional jobs this year and number will go on in the immediate future. The main reason behind this is that, the requirement is far more than the current supply of the technical manpower. Thus, the scope for the sector is enormous in India. As the requirement is huge, more and more colleges and courses are offered to meet the manpower needs of the industry. Because of this, more and more students in India are opting for a career in IT-ITES Sector. However, according to some of the top industry experts, the attrition rate is high making jobs in the IT-ITES sector vacant. Moreover, the gap between demand and supply of skilled employees is cause of concern.

Companies providing jobs in IT-ITES Sector in India

Because of dedicated hard work and effective strategies of the IT companies, India has made a global mark in world trade. Some of the flagship companies that are providing good career in IT-ITES sector are - Infosys technologies, TCS, Wipro Technologies, Tech Mahindra, Persistent, Cognizant, Amdocs, Cybage, Castech, HCL technologies, Satyam Computers, Patni, Mphasis, Convergys, Firstsource solution, L&T Infotech, Genpact, Intelnet Global services etc.

IT – ITES Industry Revenue Trends (in USD billion)

Year/ Description	2009- 10	2010- 11	2011- 12	2012- 13	2013- 14(E)	CAGR % (2009-14)
Exports	49.7	59.0	68.8	76.1	86.0	12.80
Domestic	14.3	17.3	19.0	19.2	19.0	8.22
Total	64.0	76.3	87.8	95.2	105.0	11.88

The Outsourcing History of India:

The idea of outsourcing is not new. It started way back in the 1700s when manufacturers started shifting the manufacture of goods to countries with cheaper labor during the Industrial Revolution, following the precepts of Adam Smith in his book 'The Wealth of Nations'. The history of outsourcing to India is an interesting story. Even after over a decade of competitive global outsourcing, most of it still goes to India. Reaching this pinnacle in outsourcing has been a long journey. As land, sea, and later, air routes developed between the 15th and 21st centuries, more nations started to outsource trade to other nations, eventually leading to outsourcing to India and other nations.

Why do companies actually outsource? In earlier times, cost and headcount reductions were the most common reasons to outsource. Today, the drivers are often more strategic, such as how a company can best utilize its own core competencies. Though the outsourcing of manufacturing is an old story, outsourcing to services is a relatively new phenomenon. Services outsourcing to India started in the 1980s and rapidly accelerated in the '90s. In today's world where information technology has become critical to business, the meaning of outsourcing has undergone a drastic change over the years. Companies have started

focusing on their core competencies and outsourcing many non-core functions, for which they had no competence internally.

Key Factors:

Although the IT industry in India has existed since the early 1980s, it was the early '90s which saw the emergence of outsourcing. First, some global airlines began outsourcing their back office work to India—and then IT companies followed. Some of the earliest players in the Indian outsourcing market were Texas Instruments, American Express, Swissair, British Airways and GE, who started captive units in India. Over the years, the industry has built robust processes to offer world class IT software and technology-related services.

India offers a unique combination of attributes that have established it as the preferred destination for IT-BPO. Advances in technology and communication have allowed transnational companies to rapidly globalize at a very low cost. The cost of managing workers in a distant location had fallen drastically, and the need to outsource became stronger. Significantly, India also began efforts to open up its economy to the world. Since the onset of globalization in the early 1990s, successive governments have pursued programs of economic reform committed to liberalization and privatization. The government started easing restrictions and liberalizing the economy, which has helped the country see rapid economic growth.

Developments in telephony, fiber optics and satellite communications made Internet-based communication and transfer of data possible, paving the path for outsourcing to India. The telecom industry in India used to be a government-controlled monopoly and the market was small. By 1999, the government

introduced policies which played a key role in reshaping the structure and size of the telecom Industry, allowing commercial entities to participate in almost every industry segment. The new telecom policy brought in further changes with the introduction of IP telephony and ended the state monopoly on international calling facilities. The government's liberalized investment policies have resulted in several foreign companies entering Indian markets, which has been a major contributor to the growth of the Indian economy.

In addition to the central government's intervention, state governments are also competing with each other to offer more favorable business environments in order to attract IT/ITES companies to set up development units in their states. This kind of competition is helping the industry grow at an astronomical rate.

Indian companies are enhancing their global service delivery capabilities through a combination of green field initiatives, cross-border mergers and acquisitions, partnerships and alliances with local players. Global software giants like Microsoft, Oracle, SAP and many others have established captive development centers in India over the years. Indian authorities have made efforts to further strengthen the information security environment in the country, and special initiatives have been taken to enhance the legal framework. Many companies in India have already aligned their internal processes and practices to international standards such as ISO, CMM, Six Sigma, etc. which have helped establish India as a credible outsourcing destination.

The IT & BPO sector has been a key beneficiary in India's growth, with the cost of international connectivity declining rapidly and quality of service improving significantly. India's National Association of Software and Service Companies (NASSCOM) has played a critical role in outsourcing by acting as a

coordinating body for the industry. It conducts surveys and conferences which help in the dissemination of knowledge and research in the outsourcing industry. As per NASSCOM, "While India's low-cost talent pool has helped its businesses grow, global incumbents have also recognized India's inherent advantage and have mastered this capability by off-shoring more work out of India." India's competitive advantage lies in its ability to provide huge cost savings and thus enabling productivity gains.

According to NASSCOM, the major reasons behind India's success in ITES/ BPO industry are:

- Abundant, skilled, English-speaking manpower, which is being harnessed even by ITES hubs such as Singapore and Ireland.
- High-end telecom facilities and infrastructure which are on par with global standards.
- Better focus on maintaining quality and performance standards.
- Fast turnaround times, and the ability to offer 24x7 services based on the country's unique geographic locations that allow for leveraging time zone differences.
- A friendly tax structure, which places the ITES/BPO industry on par with IT services companies.
- Proactive and positive policy environment which encourages ITES/BPO investments and simplifies rules and procedures.

India has become the largest player in offshore delivery with levels of work delivered that are amongst the highest across several verticals. The supply-side elasticity of skilled English-speaking manpower across technology and non-technology spaces is unmatched. The success of the industry has resulted in Indian

companies looking at acquisition targets worldwide, and the Indian service provider community is being viewed as a "strategic business partner" and not just an IT services vendor.

Over the years, BPO has become the second largest segment in Indian IT/ ITES industry and also the fastest growing. The scope of process outsourcing has widened over the past few years to also include KPO (Knowledge Process Outsourcing) operations. Customer Care is the largest contributor in the BPO segments. The last few years have witnessed the industry evolve from executing projects at the lowest end of the value chain, to one where Indian players are aggressively bidding for and winning large-scale turnaround projects. At the same time, the Small and Medium Providers (SMPs) in this sector are holding their own during these difficult times. The SMPs in India are integral to the growth engine of the industry in particular, and the Indian economy in general. As per studies by NASSCOM:

- The compounded annual growth rate (CAGR) of the industry has been over 25% in the last five years. Over these years, four main components have formed the industry, IT services, BPO, Engineering Services and Hardware.
- Banking and Financial Services, Telecom, Manufacturing are among the top 4 verticals for both export and domestic market.
- While hardware dominates the domestic market, IT services tops in the overall industry.

Today, Indian companies offer a wide variety of outsourced services ranging from medical transcription, customer care, medical billing services, database marketing to Web sales/ marketing, accounting, tax processing,

transaction document management, telesales/ telemarketing, HR hiring and biotech research.

Outsourcing to India has been a satisfactory and profitable experience for most companies around the world. Indian outsourcing vendors have continuously adapted to internal and external challenges and the credit for this goes to Indian outsourcing companies and the successive enabling governments. Outsourcing in India has faced adversities due to the state of the world economy and the ongoing recession, but it is surely here to stay.

Banking and Insurance sectors in India:

The banking sector in India has the advantage of access to one of the largest and most stable global financial networks. It has been strengthened by a series of financial and regulatory reforms implemented recently, such as flexibility in lending rates, gradual dilution of government holdings in public-sector banks, and the easing of restrictions on private-sector and international banks. As the Indian economy is poised for a faster growth rate, its financial sector dominated by both insurance and banking companies looks attractive for long-term investment. Indian banks and insurance companies can take advantage of the growing domestic market while aspiring for global competitiveness.

Although the international banking giants of the US and elsewhere were shaken by the financial crisis—resulting in large bailouts by the US and other federal governments, the Indian banking industry remained stable, thanks to the conservative approach adopted by Reserve Bank of India (RBI). The potential growth of the banking sector stems from the fact that only 15 percent of the population has ever borrowed from banks, and more than

40 percent do not even have bank accounts. Continued urbanization and rising middle-class incomes are the other indicators of the long-term potential of banks.

While most banks lend primarily to industry and services (to the tune of 68 percent), farm lending is 13 percent and personal lending 19 percent. Home mortgages account for more than 50 percent of personal lending.

The banking sector witnessed a surge in credit demand from 2005 to 2010, as the corporates came up with huge expansion plans, and the growth in the spending power of the middle class led to a significant expansion in retail banking. However, the growth opportunities resulted in serious issues of capital adequacy, and the prolonged recession led to the generation of a bulge in non-productive assets, invariably making the sector look vulnerable. This led to continued volatility in banking stocks. Major issues faced by public-sector banks are:

- Capital adequacy
- Competence in risk management
- Adoption of new technology
- Merger of smaller banks into viable entities
- Professionalism in management and supervision to replace the control of the finance ministry
- Freedom to acquire global talent

Indicators of banking strengths in India:

Between FY 2009-10 and FY 2012-13 (during the period of global recession):

- Bank deposits grew from 44,928 billion rupees (710 billion USD) to 67,504 billion rupees (1.1 trillion USD)
- Bank credit grew from 32,448 billion rupees (510 billion USD) to 52,605 billion rupees (830 billion USD)
- Per-capita credit surged from 28,431 rupees (450 USD) to 44,028 rupees (690 USD), indicating a strong appetite for bank credit
- Credit-deposit ratio grew from 74 percent to 79 percent (largely controlled by RBI)
- By the end of FY 2012-13, the banking sector had 109,811 branches

The Indian banking sector reported a net profit of 1,027.51 billion rupees (approximately 16 billion USD), with almost an 11.5-percent net-profit margin on its gross turnover of 149 billion rupees for the FY 2012-13.

Private banks have generally outperformed PSU (public sector undertaking) banks in terms of net- interest margins and returns on total assets:

- Net-interest margins: PSU banks 3.8 percent, private banks 5.1 percent
- Rate of return on assets: PSU banks 1.0 percent, private banks 1.3 percent
- Capital adequacy: PSU banks 13.3 percent, private banks 17.5 percent

Newly formed private banks have the competitive advantage due to strong business models, larger proportion of fee-based income in total income earned, better technology, leaner organization and aggressive marketing strategies generating new revenue streams.

The Pradhan Mantri Jan Dhan Yojana (Prime Minister's People Money Scheme) launched by Prime Minister Narendra Modi last August helped to add 115 million accounts with 8,698 crore rupees (1.4 billion USD) in bank deposits.

Foreign direct investment (FDI) and portfolio investment limits in private banks have been hiked to 74 percent, but in the cases of PSU banks they remain at 20 percent. FDI in banking and insurance can improve financial stability and capitalization, Use of better technology and Risk-management capability.

Current prospects of the banking sector

The government has undertaken some major reforms in the financial sectors, including banking and insurance. Hiking the FDI limit in the insurance sector is one of them. In private-sector banking, the FDI limit is 75 percent. As inflation showed an easing trend, RBI indicated a dovish monetary policy by reducing the policy rate by 25 basis points in March 2015 after a similar cut in January 2015, thus effecting a total cut of 50 basis points in 2015. The effective repo rate now stands at 7.5 percent. Banks are expected to

lower lending rates and deposit rates in a phased manner, while some have already passed on the benefits to borrowers. With commodity prices continuing to fall globally, RBI is expected to cut its policy rate further, and a pickup in borrowing is expected. Although banking stocks were hammered down in the market during the month of March, as company results indicate growth in their bottom lines (around the middle of FY 2015-16), banking stocks may recover and remain steady for the remaining months of 2015-16. Real gains in the banking and insurance sectors could be seen during FY 2016-17.

PSU banks, too, could do well during FY 2016-17, as now they are permitted to raise additional capital to meet the latest capital-adequacy norms, while diluting the government's holdings to the 52-percent level. More private banks are likely to be set up as in-principle approvals are being given to applicants. RBI has announced guidelines for local area and payment banks, which have received a good response.

Recently a scare regarding NPAs (non-performing assets or bad loans) of the banking sector shook the market. While announcing H1 as well as Q3 results, banks continued to report lower earnings and a higher provisioning for bad debt on a year-on-year basis. RBI has taken timely action to manage the issue of NPAs. (For the banking sector, NPAs had accelerated from 4.1 percent in March 2014 to 4.5 percent in September 2014). Due to the prolonged recession, major sectors of the economy such as engineering construction and infrastructure, mining, textiles, metals as well as aviation accounted for more than 55 percent of the major stressed assets of PSU banks.

The bank regulator has tightened rules for asset reconstruction companies, hiking the minimum requirement of investment in security receipts from 5 to 15 percent. RBI has also issued revised guidelines allowing flexibility in infrastructure-project loans and

advances for core-industry project financing. Norms for converting loans into the equity of defaulting companies, too, have been made more flexible and workable.

The government has also strengthened the powers of the IRDA (Insurance Regulatory and Development Authority) to ensure a more effective regulation of the sector.

The fortunes of the financial sector, including that of banks and insurance, are driven by the performance dynamics of the core economies of manufacturing, trade and services. Current indicators show that growth has bottomed out, and the RBI has been indicating a dovish policy stance. Gradual reduction in NPAs with growth in credit demand could be a couple of quarters away. Private banks could be the first to recover when the economy shows signs of sustainable recovery. Very large spending programmes outlined in the budget of FY 2015-16 along with optimistic railway outlays indicate the positives of the economy and the banking sector. The revival of the infrastructure and housing sectors could perk up the banking space. As loss-making infrastructure, mining and metal companies turn around, even the PSU banks could show smart recovery. While shares in private banks such as Axis Bank, Kotak Mahindra Bank, Karur Vysya Bank, HDFC Bank and South Indian Bank could be accumulated during dips, State Bank of India, Bank of Baroda and Bank of India should be on the watch list.

Insurance-sector developments

The Parliament of India recently ratified the Insurance Laws (Amendment) Bill, promulgated earlier as an insurance ordinance through presidential proclamation, hiking the upper limit of foreign investment in insurance from 26 to 49 percent. The law requires that management control and ownership of insurance companies remain with Indian collaborator entities. The aim is to reduce the restrictions on entry to the insurance market

and enable flows of much-needed capital into the sector. MetLife and AIG are some of the foreign players who already have operations in India through joint ventures.

Significant joint ventures in the insurance sector include:

- Bajaj with Allianz SE of Germany
- Aditya Birla Group with Sun Life Financial of Canada
- SBI Life is a joint venture of SBI with BNP Paribas Assurance of France
- Future Generali India Insurance is a joint venture between Future Group and Italy's Generali Group
- Bharti AXA General Insurance Co. is a joint venture between Bharti Enterprises and France's AXA Group.

India, along with other countries in the Asia-Pacific region, is considered important by the global players in the insurance space. The large insurable population exceeding 550 million is an important consideration in determining the attractiveness of this sector. India's insurance market could grow 400 percent in the next 10 years from its current size of 60,000 crore rupees. India's life insurance sector is one of the largest in the world, with an approximate 40-percent growth rate based on new business premium collections. The number of policies is expected to grow at a 12-to-15-percent CAGR (compound annual growth rate) in the next decade. With the penetration level expected to reach 5 percent from the present level of 3.9 percent in the next five years, the total market size could reach the one-trillion-USD mark within seven to nine years.

The life insurance business

India, with the second largest population in the world, has very low life insurance coverage, in terms of life insurance premium collections, accounting for only 2 percent of global premium collections against a population that is more than 16 percent of the world's population. Penetration of life insurance (based on a premium-to-GDP ratio) has remained at 3.5 to 3.9 percent of GDP in India, compared to 11 percent in Japan and 9 percent in the developed world. A projected growth rate of 7 to 8 percent in GDP means a

huge rise in demand for insurance products, considering the rise in life expectancy and income levels of the upper-middle and middle class populations with fast-changing lifestyles. In terms of the number of life insurance policies, India is at the top with almost 360 million policies, the number growing at a rate of more than 12 percent annually.

The recent relaxation of foreign ownership and investment limits has evoked a positive response from global insurers, and some of them have shown interest in increasing their stakes in the existing joint ventures. Many more such joint ventures are likely to follow.

International joint ventures could face some challenges at initial stages in the Indian market. The life insurance market has been completely dominated by LIC (Life Insurance Corporation), wholly owned by the central government. The market share of LIC fell gradually from 100 percent to 75 percent since the insurance sector was opened up to private investors 15 years ago.

In an environment of strong competition, a bancassurance model could help both banks and insurance companies, as this would strengthen existing distribution channels, particularly in rural markets. The anticipated evolution of post offices as banks in a couple of years would further accelerate the penetration of banking and insurance in rural markets.

Non-life segment

Out of 28 major non-life insurers, some companies from the private sector also operate as underwriters of policies for accident coverage, travel and health insurance. Some well-known names in this category are:

- Cigna TTK Health Insurance Co
- Max Bupa Health Insurance Co
- Star Health and Allied Insurance Co
- Religare Health Insurance Co
- Apollo Munich Health Insurance Co

The major public-sector, non-life insurers include:

- Agricultural Insurance Co
- Export Credit Guarantee Corp
- General Insurance Corp (reinsurance business)
- New India Assurance Co
- National Insurance Co
- United India Insurance Co
- Oriental Insurance Co

The general insurance or non-life insurance market size is around 770,000 million rupees (12.41 billion USD) in premiums per annum. The growth rate of this segment has been 17 percent per annum. Health insurance accounts for a quarter of the non-life insurance market. The markets in the non-life segment could show an accelerated growth rate of 20 to 25 percent per annum.

Insurance regulator IRDA has estimated that this sector will require additional capital to the tune of 500,000 million rupees within the next 10 years.

Some of the state-run, non-life insurers such as National Insurance Company as well as New India Assurance Co are considering an IPO (initial public offering) ahead of listings on the stock exchange, with the central government considering a divestment of its stake in the insurance arm. The giant Life Insurance Corporation being listed could be a huge opportunity for investors. Such a move, however, is bitterly opposed by unions. Complete privatization of insurance and banking is not going to happen anytime soon. As far as PSU banks are concerned, the government has decided to keep a 52-percent stake.

The RBI has permitted banks to earn brokerage fees by selling insurance products. The central government plans to launch some additional insurance schemes to protect farmers against various risks related to agriculture. Growing upper-middle and middle classes with fast-rising young, educated, insurable populations will help make market growth sustainable.