

Regional Disparity in India

Regional disparities in economic development are one of the common features found in all over the world today.

Regional disparity denotes regional imbalances or regional dualism or growth differentiation.

The coexistence of relatively developed and economically depressed states and even regions with in each state known as a regional imbalance. The development process nowadays generally concentrate around the few main territories of a nation and others do not receive the benefits of such development due to factors like market imperfection, geographical constraints, false government policies, lack of law and order and other social, political and economic reasons. (1)

The prevalence of regional disparities is a common phenomenon and is present both in developed and developing countries. Even the richest country of the world- USA has the problem of imbalanced regional development and many small countries (such as Italy & France) and socialist countries (such as Russia and China) are also facing this problem. Different regions of a country grow at very unequal rates, resulting inter-regional and intra-regional disparities which in turn give socio economic problems. (2) In India, regional disparities exist from the British time period. The British rulers as well as industrialists started to develop only those embarked regions of the country

which were potentially suitable for prosperous manufacturing and trading activities and served their interests. The British industrialist preferred to concentrate their activities mostly on

metropolitan cities like Calcutta, Bombay, and Chennai etc. as compare to the other cities of the country. The uneven pattern of investment in industries as well as in economic overhead like transportation and communication facilities, irrigation and power made by the British has resulted regional disparities in India.

Disparities in economic and social development across the regions and intra-regional disparities among different segments of the society have been the major plank for adopting planning in India since independence. During the first three decades of planning, the government gave much stress to establish heavy industries in backward regions but this problem remained unabated.

Main Causes of Regional Imbalances in India

The following points highlight the nine main causes of regional imbalances in India. Some of the causes are: 1. Historical Factor 2. Geographical Factors 3. Locational Advantages 4. Inadequacy of Economic Overheads 5. Failure of Planning Mechanism 6. Marginalisation of the Impact of Green Revolution to Certain Regions 7. Lack of Growth of Ancillary Industries in Backward States and Others.

Regional Imbalances: Cause

Historical Factor

Historically, regional imbalances in India started from its British regime. The British rulers as well as industrialists started to develop only those earmarked regions of the country which as per their own interest were possessing rich potential for prosperous manufacturing and trading activities.

British industrialists mostly preferred to concentrate their activities in two states like West Bengal and Maharashtra and more particularly to three metropolitan cities like Kolkata, Mumbai and Chennai. They concentrated all their industries in and around these cities neglecting the rest of the country to remain backward.

The land policy followed by the British frustrated the farmers to the maximum extent and also led to the growth of privileged class like zamindars and money lenders for the exploitation of the poor farmers. In the absence of proper land reform measures and proper industrial policy, the country could not attain economic growth to a satisfactory level.

The uneven pattern of investment in industry as well as in economic overheads like transport and communication facilities, irrigation and power made by the British had resulted uneven growth of some areas, keeping the other areas totally neglected.

Geographical Factors:

Geographical factors play an important role in the developmental activities of a developing economy. The difficult terrain surrounded by hills, rivers and dense forests leads to increase in the cost of administration, cost of developmental projects, besides making mobilisation of resources particularly difficult.

Most of the Himalayan states of India, i.e., Himachal Pradesh, Northern Kashmir, the hill districts of Uttar Pradesh and Bihar, Arunachal Pradesh and other North-Eastern states, remained mostly backward due to its inaccessibility and other inherent difficulties.

Adverse climate and proneness to flood are also responsible factors for poor rate of economic development of different regions of the country as reflected by low agricultural productivity and lack of industrialisation. Thus these natural factors have resulted uneven growth of different regions of India.

Locational Advantages:

Locational advantages are playing an important role in determining the development strategy of a region. Due to some locational advantages, some regions are getting special favour in respect of site selections of various developmental projects.

While determining the location of iron and steel projects or refineries or any heavy industrial project, some technical factors included in the locational advantage are getting special considerations. Thus regional imbalances arise due to such locational advantages attached to some regions and the locational disadvantages attached to some other backward regions.

Inadequacy of Economic Overheads:

Economic overheads like transport and communication facilities, power, technology, banking and insurance etc. are considered very important for the development of a particular region.

Due to adequacy of such economic overheads, some regions are getting a special favour in respect of settlement of some developmental projects whereas due to inadequacy of such economic overheads, some regions of the country, viz., North-Eastern Region, Himachal Pradesh, Bihar etc. remained much backward as compared to other developed regions of the country.

Moreover, new investment in the private sector has a general tendency to concentrate much on those regions having basic infrastructural facilities.

Regional Imbalances:

Although balanced growth has been accepted as one of the major objectives of economic planning in India, since the Second Plan onwards but it did not make much headway in achieving this object. Rather, in real sense, planning mechanisms has enlarged the disparity between the developed states and less developed states of the country.

In respect of allocating plan outlay relatively developed states get much favor than less developed state

From First Plan to the Seventh Plan, Punjab and Haryana have received the highest per capita plan outlay, all along. The other three states like Gujarat, Maharashtra and Madhya Pradesh have also received larger allocation of plan outlays in almost all the five year plans.

On the other hand, the backward states like Bihar, Assam, Orissa, Uttar Pradesh and Rajasthan have been receiving the smallest allocation of per capita plan outlay in almost all the plans.

Due to such divergent trend, imbalance between the different states in India has been continuously widening, inspite of framing achievement of regional balance as one of the important objectives of economic planning in the country.

Marginalisation of the Impact of Green Revolution to Certain Regions:

In India, the green revolution has improved the agricultural sector to a considerable extent through the adoption of new agricultural strategy. But unfortunately the benefit of such new

agricultural strategy has been marginalised to certain definite regions keeping the other regions totally untouched.

The Government has concentrated this new strategy to the heavily irrigated areas with the idea to use the scarce resources in the most productive manner and to maximise the production of foodgrains so as to solve the problem of food crisis.

Thus the benefit of green revolution is very much restricted to the states like Punjab, Haryana and plain districts of Uttar Pradesh leaving the other states totally in the dark about the adoption of new agricultural strategy.

This has made the well-off farmers much better off, whereas the dry land farmers and non-farming rural population remained totally untouched. Thus in this way new agricultural strategy has aggravated regional imbalances due to its lack of all-embracing approach.

Lack of Growth of Ancillary Industries in Backward States:

The Government of India has been following a decentralised approach for the development of backward regions through its investment programmes on public sector industrial enterprises located in backward areas like Rourkela, Barauni, Bhilai, Bongaigaon etc. But due to lack of growth of ancillary industries in these areas, all these areas remained backward in spite of huge investment made by the Centre.

Lack of Motivation on the part of Backward States:

Growing regional imbalance in India has also been resulted from lack of motivation on the part of the backward states for industrial development. While the developed states like Maharashtra, Punjab, Haryana, Gujarat, Tamil Nadu etc. are trying to attain further industrial development, but the backward states have been showing their interest on political intrigues and manipulations instead of industrial development.

Political Instability:

Another important factor responsible for regional imbalance is the political instability prevailing in the backward regions of the country. Political instability in the form of unstable government, extremist violence, law and order problem etc. have been obstructing the flow of investments into these backward regions besides making flight of capital from these backward states.

Thus this political instability prevailing in some backward regions of the country are standing as a hurdle in the path of economic development of these regions.

GOVERNMENT POLICIES FOR REGIONAL DEVELOPMENT

For the economic development of any country or states socio-economic development is must. The Indian government realizes the importance of balance growth of the economy since the starting of planning process.

After that planning commission adopted several measures for balanced regional development are.

1. Special area development program to develop hilly area, tribal area, drought prone area. The main objective of these program is to benefit small farmer, agricultural labourers, and to rural development in backward areas.

2. Backward region grant fund (BRGF) 2006 has created for promoting development in 250 most backward districts of the country. BGRF replaced the Rashtriya Sam Vikasyojna. In 2013-14, 11,500cr have been given to this fund.

3. To reduced regional disparities state government also gave some incentives to attract investor in their states.

These incentives are concession loan, concessional rate of power supply, exemption from municipal tax, subsidy for investment in certain areas etc.

Beside of these policy there are many more plans and policies are constructed by government for development of infrastructure, for promoting education, health facilities etc. To promote investments in backward regions there are many public sector financial institutions namely small industrial development bank of India (SIDBI), Industrial financial corporation of India (IFCI), State Finance Corporation (SFCs) etc. which provide concessional loan and technical assistance to entrepreneurs of backward regions.

Factors Influencing the Location of Industries : Geographical and Non-Geographical

Factors!

Many important geographical factors involved in the location of individual industries are of relative significance, e.g., availability of raw materials, power resources, water, labour, markets and the transport facilities.

But besides such purely geographical factors influencing industrial location, there are factors of historical, human, political and economic nature which are now tending to surpass the force of geographical advantages. Consequently, the factors influencing the location of industry can be divided into two broad categories i.e.

(I) Geographical factors, and

(II) Non-geographical factors.

I. Geographical Factors:

Following are the important geographical factors influencing the location of industries.

1. **Raw Materials:** The significance of raw materials in manufacturing industry is so fundamental that it needs no emphasising. Indeed, the location of industrial enterprises is sometimes determined simply by location of the raw materials. Modern industry is so complex that a wide range of raw materials is necessary for its growth.

Further we should bear in mind that finished product of one industry may well be the raw material of another. For example, pig iron, produced by smelting industry, serves as the raw material for steel making industry. Industries which use heavy and bulky raw materials in their primary stage in large quantities are usually located near the supply of the raw materials.

It is true in the case of raw materials which lose weight in the process of manufacture or which cannot bear high transport cost or cannot be transported over long distances because of their perishable nature. This has been recognised since 1909 when Alfred Weber published his theory of location of industry.

The jute mills in West Bengal, sugar mills in Uttar Pradesh, cotton textile mills in Maharashtra and Gujarat are concentrated close to the sources of raw materials for this very reason. Industries

like iron and steel, which use very large quantities of coal and iron ore, losing lot of weight in the process of manufacture, are generally located near the sources of coal and iron ore.

Some of the industries, like watch and electronics industries use very wide range of light raw materials and the attractive influence of each separate material diminishes. The result is that such industries are often located with no reference to raw materials and are sometimes referred to as 'footloose industries' because a wide range of locations is possible within an area of sufficient population density.

2. Power:

Regular supply of power is a pre-requisite for the localisation of industries. Coal, mineral oil and hydro-electricity are the three important conventional sources of power. Most of the industries tend to concentrate at the source of power.

The iron and steel industry which mainly depends on large quantities of coking coal as source of power are frequently tied to coal fields. Others like the electro-metallurgical and electro-chemical industries, which are great users of cheap hydro-electric power, are generally found in the areas of hydro-power production, for instance, aluminium industry. As petroleum can be easily piped and electricity can be transmitted over long distances by wires, it is possible to disperse the industry over a larger area. Industries moved to southern states only when hydro-power could be developed in these coal-deficient areas.

Thus, more than all other factors affecting the location of large and heavy industries, quite often they are established at a point which has the best economic advantage in obtaining power and raw materials.

Tata Iron and Steel Plant at Jamshedpur, the new aluminium producing units at Korba (Chhattisgarh) and Renukoot (Uttar Pradesh), the copper smelting plant at Khetri (Rajasthan) and

the fertilizer factory at Nangal (Punjab) are near the sources of power and raw material deposits, although other factors have also played their role.

3. Labour:

No one can deny that the prior existence of a labour force is attractive to industry unless there are strong reasons to the contrary. Labour supply is important in two respects (a) workers in large numbers are often required; (b) people with skill or technical expertise are needed. Estall and Buchanan showed in 1961 that labour costs can vary between 62 per cent in clothing and related industries to 29 per cent in the chemical industry; in the fabricated metal products industries they work out at 43 per cent.

In our country, modern industry still requires a large number of workers in spite of increasing mechanisation. There is no problem in securing unskilled labour by locating such industries in large urban centres. Although, the location of any industrial unit is determined after a careful balancing of all relevant factors, yet the light consumer goods and agro-based industries generally require a plentiful of labour supply.

4. Transport:

Transport by land or water is necessary for the assembly of raw materials and for the marketing of the finished products. The development of railways in India, connecting the port towns with hinterland determined the location of many industries around Kolkata, Mumbai and Chennai. As industrial development also furthers the improvement of transport facilities, it is difficult to estimate how much a particular industry owes to original transport facilities available in a particular area.

5. Market:

The entire process of manufacturing is useless until the finished goods reach the market. Nearness to market is essential for quick disposal of manufactured goods. It helps in reducing the transport cost and enables the consumer to get things at cheaper rates.

It is becoming more and more true that industries are seeking locations as near as possible to their markets; it has been remarked that market attractions are now so great that a market location is being increasingly regarded as the normal one, and that a location elsewhere needs very strong justification.

Ready market is most essential for perishable and heavy commodities. Sometimes, there is a considerable material increase in weight, bulk or fragility during the process of manufacture and in such cases industry tends to be market oriented.

6. Water:

Water is another important requirement for industries. Many industries are established near rivers, canals and lakes, because of this reason. Iron and steel industry, textile industries and chemical industries require large quantities of water, for their proper functioning.

Significance of water in industry is evident from Table 27.3. Also it requires 36,400 litres of water to produce one kwh of thermal electricity. Further, it is worth noting that water used in industries gets polluted and is therefore not available for any other purpose.

Table 27.3 Requirement of Water in Industry:

Name of the industry	Amount of water required in litres/tonne
Steel	300,000
Sulphite paper	290,000
Oil refining	25,600

Rayon	1,000,000
Paper from wood	173,000

7. Site:

Site requirements for industrial development are of considerable significance. Sites, generally, should be flat and well served by adequate transport facilities. Large areas are required to build factories. Now, there is a tendency to set up industries in rural areas because the cost of land has shot up in urban centres.

8. Climate:

Climate plays an important role in the establishment of industries at a place. Harsh climate is not much suitable for the establishment of industries. There can be no industrial development in extremely hot, humid, dry or cold climate.

The extreme type of climate of north-west India hinders the development of industries. In contrast to this, the moderate climate of west coastal area is quite congenial to the development of industries. Because of this reason, about 24 per cent of India's modern industries and 30 per cent of India's industrial labour is concentrated in Maharashtra-Gujarat region alone.

Cotton textile industry requires humid climate because thread breaks in dry climate. Consequently, majority of cotton textile mills are concentrated in Maharashtra and Gujarat. Artificial humidifiers are used in dry areas these days, but it increases the cost of production.

II. Non-Geographical Factors:

Now-a-days alternative raw materials are also being used because of modern scientific and technological developments. Availability of electric power supply over wider areas and the increasing mobility of labour have reduced the influence of geographical factors on the location of industries.

The non-geographical factors are those including economic, political, historical and social factors. These factors influence our modern industries to a great extent. Following are some of the important non-geographical factors influencing the location of industries.

1. **Capital:** Modern industries are capital-intensive and require huge investments. Capitalists are available in urban centres. Big cities like Mumbai, Kolkata, Delhi, and Chennai are big industrial centres, because the big capitalists live in these cities.

2. Government Policies:

Government activity in planning the future distribution of industries, for reducing regional disparities, elimination of pollution of air and water and for avoiding their heavy clustering in big cities, has become no less an important locational factor.

There is an increasing trend to set up all types of industries in an area, where they derive common advantage of water and power and supply to each other the products they turn out. The latest example in our country is the establishment of a large number of industrial estates all over India even in the small-scale industrial sector.

It is of relevance to examine the influence of India's Five Year plans on industrial location in the country. The emergence of suitable industries in south India around new nuclei of public sector plants and their dispersal to backward potential areas has taken place due to Government policies. The state policy of industrial location has a greater hand in the establishment of a number of fertiliser factories, iron and steel plants, engineering works and machine tool factories including railway, shipping, aircraft and defence installations and oil refineries in various parts in the new planning era in free India.

We may conclude by noting that the traditional explanation of a location of industry at a geographically favourable point is no longer true. Location of oil refinery at Mathura, coach

factory at Kapurthala and fertiliser plant at Jagdishpur are some of the results of government policies.

3. Industrial Inertia:

Industries tend to develop at the place of their original establishment, though the original cause may have disappeared. This phenomenon is referred to as inertia, sometimes as geographical inertia and sometimes industrial inertia. The lock industry at Aligarh is such an example.

4. Efficient Organisation:

Efficient and enterprising organisation and management is essential for running modern industry successfully. Bad management sometimes squanders away the capital and puts the industry in financial trouble leading to industrial ruin.

Bad management does not handle the labour force efficiently and tactfully, resulting in labour unrest. It is detrimental to the interest of the industry. Strikes and lock-outs lead to the closure of industries. Hence, there is an imperative need of effective management and organisation to run the industries.

5. Banking Facilities:

Establishment of industries involves daily exchange of crores of rupees which is possible through banking facilities only. So the areas with better banking facilities are better suited to the establishment of industries.

6. Insurance:

There is a constant fear of damage to machine and man in industries for which insurance facilities are badly needed.

Credit II

Agro-Based Industries:

- (a) Agro-based industries are comparatively easy to establish and provide income in the rural areas with less investment.
- (b) These industries facilitate effective and efficient utilisation of agricultural raw materials.
- (c) Agro-based industries transmit an industrial – culture in rural areas thus bringing about modernisation and innovation in agriculture itself.
- (d) Some of the agro-based industries like processed food and food preparations have tremendous export potential.
- (e) Agro-based industries can be set up on co-operative basis ensuring participation of the people in the development process.

Cotton Textile Industry in India – Production, Growth and Development!

Growth and Development:

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.

The muslins of Dhaka, chintzes of Masulipatnam, calicos of Calicut, baftas of Cambay and gold-wrought cotton piece goods of Burhanpur, Surat and Vadodara acquired a worldwide celebrity by virtue of their quality and design.

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 modern 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 first successful modern 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 modern 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. (see Table 27.4)

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. The share of mill sector in cotton cloth production came down from 80.69 per cent in 1950-51 to only 5.37 per cent in 2003-04.

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.

The powerloom industry produces a wide variety of cloth with intricate designs. The powerloom sector accounts for about 63 per cent of the total cloth production in the country and contributes significantly to the export earnings.

The production of cloth as well as employment has been increasing in the powerloom sector. During 2002-03, the production of cloth in the decentralised powerloom sector was 18,281 million sq. metres while the employment generation was 4.23 million. The corresponding figures estimates for 2003- 04 were 17,071 million sq metre and 4.18 million respectively.

3. Handlooms:

The handloom sector provides employment to over 65 lakh persons engaged in weaving and allied activities. The production of handloom fabrics registered more than fifteen fold increase from 500 million sq metres in 1950-51 to 7,585 million sq metres in 2001-02. This sector constitutes nearly 14 per cent of the total cloth produced in the country and also contributes substantially to the export earnings.

Table 27.4 shows that the production of spun yam and cotton cloth has increased considerably during the 53 years from 1950-51 to 2003-04. The production of spun yarn registered more than fourfold increase from 533 million kg in 1950-51 to 2,121 million kg in 2003-04.

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. Table 27.5 shows that powerlooms contribute an overwhelmingly large percentage of production of fabrics.

Table 27.5 Production of Cotton Cloth (Mill Cloth) in India, 2002-03:

State/Union Territory	Production in Sq Mtr	Percentage of all India production
1. Maharashtra	3,82,257	39.38
2. Gujarat	3,21,775	33.14
3. Tamil Nadu	64544	6.69
4. Punjab	55,784	5.75
5. Madhya Pradesh	47305	4.87
6. Uttar Pradesh	32386	3.34
7. Rajasthan	28384	2.92
8. Pondicherry	24357	2.51

9. Karnataka	7,222	0.74
10. Kerala	6342	0.66
Total	9,70,756	100.00

Locational Factors:

Several factors, like availability of raw cotton, market, transport, etc. play a key role in the localisation of cotton textile industry. The significance of raw cotton is evident from the fact that 80 per cent of the industry is coterminous with the cotton growing tracts of the country.

Some of the important centres such as Ahmedabad, Solapur, Nagpur, Coimbatore and Indore are located in the areas of large scale cotton cultivation.

Mumbai is also not far away from the cotton producing areas of Maharashtra and Gujarat which have contributed a good deal in the localisation and growth of cotton textile industry here. It is equally important to note that cotton is a pure raw material, in the sense that it does not lose much of its weight in the process of manufacturing and the slight loss in weight is more than compensated by the use of sizing materials.

There is not much of difference between the cost of transporting raw cotton and finished cloth. Both can be transported with equal ease and without adding much to the total cost of production. Hence, this industry normally tends to be located at such centres which have favourable transport facilities with respect to market. In other words, it is primarily a market oriented industry.

With tropical and sub-tropical climate, all parts of India provide vast market potential for cotton textile industry. West Bengal, Bihar, Uttar Pradesh, Kerala and Orissa do not grow cotton and still have large number of big centres where cotton textile industry has flourished well.

Thus although in earlier stages of industrialisation, cotton textile manufacturing was concentrated in Mumbai, it has witnessed great spatial spread and now covers almost the entire country. Since, it was a traditional cottage industry, cheap and skilled labour was readily available. The most notable feature of the distribution of the industry is that even within a state, the industry is localised within particular areas and regions, almost to the complete exclusion of others. Dispersal of industry from the old nuclei started after 1921 with railway lines penetrating into the peninsular region. New centres like Coimbatore, Madurai, Bangalore, Nagpur, Indore, Solapur and Vadodara were favourably located in respect to raw material, market and labour than places of original locations. This industry also reached some places with some additional advantages, such as nearness to coal (Nagpur), financial facilities (Kanpur) and wide market with port facilities (Kolkata).

Dispersal of cotton textile industry was further boosted with the development of hydroelectricity. The growth of this industry in Coimbatore, Madurai and Tirunelveli is largely due to the availability of hydroelectricity from Pykara dam. The industry also tended to shift from areas of high labour cost to those with low labour cost. The labour cost factor played a crucial role in establishing this industry at Madurai, Turunelveli, and Coimbatore.

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 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.

Following are the main reasons of phenomenal growth of cotton textile industry in and around Mumbai.

(i) Mumbai enjoys humid climate which is helpful for this industry because thread does not break so frequently.

(ii) Mumbai is a very important port which helps in import of machinery and long staple cotton and export of cloth.

(iii) Cheap hydro-electricity is readily available from the nearby areas.

(iv) The black-cotton soil in the hinterland of Mumbai provides cotton as the basic raw material.

(v) Cheap labour can be drawn from the surrounding areas.

(vi) There is ready market for Mumbai products both in India and abroad.

(vii) Mumbai is well-connected by a network of roads and railways which help in easy transportation of raw material and finished goods.

(viii) Facilities for washing and dyeing also exist here.

(ix) There is no dearth of capital inputs.

(x) Mumbai has the advantage of an early start.

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. Following facilities are available to Ahmedabad:

- (i) Ahmedabad lies near the main cotton belt of India and there is no problem of obtaining raw cotton.
- (ii) Climate is humid and is suited to this industry.
- (iii) Cheap power is readily available.
- (iv) Cheap and skilled labour is drawn from the nearby areas.
- (v) Ahmedabad is served by a network of railways and roadways.
- (vi) Land at Ahmedabad is much cheaper as compared to that in Mumbai.
- (vii) Most of Ahmedabad mills produce cheap cloth which finds a ready market among the poor masses of India.

The other important centres of Gujarat are Vadodara, Bharuch, Surat, Rajkot, Porbandar, Maurvi, Bhavnagar, Virangam, 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, Tiruchchirappalli, 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. Other important centres are Moradabad, Varanasi, Agra, Bareilly, Aligarh, Modinagar, Saharanpur, Rampur, Etawah, Lucknow, Mirzapur, etc.

Other producers are detailed as below:

Andhra Pradesh:

Hyderabad, Secunderabad, Guntur, East Godavari and Udayagiri.

Kerala:

Thiruvananthapuram, Alleppey, Kollam, Trichur, Alwaye.

Bihar:

Gaya, Patna, Bhagalpur

Rajasthan:

Pali, Beawar, Vijayanagar, Kishangarh, Ganganagar, Bhilwara, Udaipur, Jaipur, Kota, Ajmer.

Punjab:

Amritsar, Ludhiana, Phagwara.

Haryana:

Bhiwani, Hissar, Rohtak.

Karnataka:

Bangalore, Belgaum, Mangalore, Chitradurga, Devangera, Gulbarga, Chennapatnam, Mysore.

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 whereas percentage of such looms ranges from cent per cent in Hong Kong and the USA., 99 per cent in Canada, 92 per cent in Sweden, 83 per cent in Norway, 76 per cent in Denmark, 70 per cent in Australia, 60 per cent in Pakistan and 45 per cent in China.

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. If the productivity of an American worker is taken as 100, the corresponding figure is 51 for U.K. 33 for Japan and only 13 for India.

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 blow to the organised sector. It took almost 23 years for the Government to realise this and introduce legislation for encouraging 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. What is alarming is 483 mills have already been closed.

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Petrochemical Industry in India

The Major Products of Petrochemical Industry:

The original raw material of the industry is crude oil. Ready and easy availability of crude oil is pre-requisite of the establishment of petrochemical industry

I. a. naphtha or gas cracker plants produce ethylene, propylene etc. b. Aromatic complexes to produce: Benzene, Toluene and xylene.

II. a. Polymers, styrene etc.

b. Synthetic fibre

c. Elastomers like butyl rubber, SBR, PBR etc.

d. Surfactant intermediates

e. Other petrochemicals like solvents etc.

III. Synthetic fibres.

IV. Polymers & plastic materials etc.

At its initial years of growth, Central Government undertakings namely Indian oil, gas authority of India (Gail), Indian Petrochemical (IPCL) took major initiative to promote petrochemical industry. These companies along with private players like Reliance, Oswal agro invested huge amount of money in the development of the industry.

Altogether nine petrochemical plants are now in operative, of which four are located at Gujarat and three are located within Maharashtra. One each are situated in U.P. and West Bengal respectively

Petrochemical industry is capital intensive and technology intensive as well. Initial investment may exceed 50,000 crore. It should have capacity above break-even point. Otherwise the production cost will not be able face competition.

India Government in its policy had declared several tariff and duty exemptions in order to give incentives for expansion of petrochemical industry as a whole. Government is also eager to attract foreign direct investment (FDI) in petrochemical sector. To attract foreign direct investment, Government of India has relaxed some licensing policies.

According to economic survey 2004-05 production of major petrochemicals in 2003-04 increased by 6.9% and reached a level of 7,006 thousand tonnes. During 2004-05, production of major petrochemicals is expected to grow by 5% and reach a level of 7,355 thousand tonnes.

India is still not self-reliant in plastic and synthetic fibre production. The total consumption of plastic and synthetic fibre as 3.8 million tonnes and 1.65 million tonnes respectively in 2001-02. The increased capacity utilization during IX th five year plan enabled India to produced and marketable surplus of polyethylene and polystyrene.

At present eight cracker complexes produced 2.4 million tonnes ethylene. Four aromatic complexes — Bongaigaon Refinery, IPCL and two plants of Reliance produced 1.8 million tonnes.

The capacity of polymers, synthetic fibre, elastomers and surfactants intermediate are as follows in 2002:

1. Polymer capacity — 42, 15,000 tonnes/annum.
2. Synthetic fibre capacity — 20, 69,000 tonnes/annum.
3. Elastomers capacity — 1, 45,000 tonnes/annum.
4. Surfactants capacity — 4, 09,000 tonnes/annum.

From the production and consumption figures of 1990-91 and 2000-01, it is evidently clear that from a deficient producing country, India has emerged as surplus producing country in the case of polymer. The rest two, i.e., fibres and surfactants production is now at par with consumption.

Future Scope:

Keeping in mind of India's present industrial growth rate (around 9% each year). Petrochemical industry might register huge growth as government is giving all kinds of incentives, the plastics, fibres and rubber industry may provide fillip to the host of innumerable downstream industries, providing employment directly or indirectly to millions.

Credit III

LPG reforms in Indian economy

LPG stands for Liberalization, Privatization, and Globalization. India under its New Economic Policy approached International Banks for development of the country. These agencies asked Indian Government to open its restrictions on trade done by the private sector and between India and other countries.

Indian Government agreed to the conditions of lending agencies and announced New Economic Policy (NEP) which consisted wide range of reforms. Broadly we can classify the measures in two groups:

1. Structural Reforms

With long-term perspective and eyeing for improvement of the economy and enhancing the international competitiveness, reforms were made to remove rigidity in various segments of Indian economy.

2. Stabilization Measures (LPG)

These measures were undertaken to correct the inherent weakness that has developed in Balance of Payments and control the inflation. These measures were short-term in nature. Various Long-Term Structural Reforms were categorized as:

- ***Liberalization***
- ***Privatization and***
- ***Globalization***

Collectively they are known by their acronym LPG. The balance of Payment is the system of recording the economic transactions of a country with the rest of the world over a period of one year. When the general prices of goods and services are increasing in an economy over a period of time, the same situation is called Inflation. Let's understand each terminology in detail

Liberalization

The basic aim of liberalization was to put an end to those restrictions which became hindrances in the development and growth of the nation. The loosening of government control in a country and when private sector companies' start working without or with fewer restrictions and government allow private players to expand for the growth of the country depicts liberalization in a country.

Objectives of Liberalization Policy

- To increase competition amongst domestic industries.
- To encourage foreign trade with other countries with regulated imports and exports.
- Enhancement of foreign capital and technology.
- To expand global market frontiers of the country.
- To diminish the debt burden of the country.

Privatization

This is the second of the three policies of LPG. It is the increment of the dominating role of private sector companies and the reduced role of public sector companies. In other words, it is the reduction of ownership of the management of a government-owned enterprise. Government companies can be converted into private companies in two ways:

- By disinvestment
- By withdrawal of governmental ownership and management of public sector companies.

Forms of Privatization

- **Denationalization or Strategic Sale:** When 100% government ownership of productive assets is transferred to the private sector players, the act is called denationalization.
- **Partial Privatization or Partial Sale:** When private sector owns more than 50% but less than 100% ownership in a previously construed public sector company by transfer of shares, it is called partial privatization. Here the private sector owns the majority of shares. Consequently, the private sector possesses substantial control in the functioning and autonomy of the company.
- **Deficit Privatization or Token Privatization:** When the government disinvests its share capital to an extent of 5-10% to meet the deficit in the budget is termed as deficit privatization.

Objectives of Privatization

- Improve the financial situation of the government.
- Reduce the workload of public sector companies.
- Raise funds from disinvestment.
- Increase the efficiency of government organizations.
- Provide better and improved goods and services to the consumer.
- Create healthy competition in the society.
- Encouraging foreign direct investments (FDI) in India.

Globalization

It means to integrate the economy of one country with the global economy. During Globalization the main focus is on foreign trade & private and institutional foreign investment. It is the last policy of LPG to be implemented.

Globalization as a term has a very complex phenomenon. The main aim is to transform the world towards independence and integration of the world as a whole by setting various strategic policies. Globalization is attempting to create a borderless world, wherein the need of one country can be driven from across the globe and turning into one large economy.

The most important outcome of the globalization process is Outsourcing. During the outsourcing model, a company of a country hires a professional from some other country to get their work done, which was earlier conducted by their internal resource of their own country.

The best part of outsourcing is that the work can be done at a lower rate and from the superior source available anywhere in the world. Services like legal advice, marketing, technical support, etc. As Information Technology has grown in the past few years, the outsourcing of contractual

work from one country to another has grown tremendously. As a mode of communication has widened their reach, all economic activities have expanded globally.

Various Business Process Outsourcing companies or call centres, which have their model of a voice-based business process have developed in India. Activities like accounting and book-keeping services, clinical advice, banking services or even education are been outsourced from developed countries to India.

The most important advantage of outsourcing is that big multi-national corporate or even small enterprises can avail good services at a cheaper rate as compared to their country's standards. The skill set in India is considered most dynamic and effective across the world. Indian professionals are best at their work. The low wage rate and specialized personnel with high skills have made India the most favorable destination for global outsourcing in the later stage of reformation.

DEFINING THE KNOWLEDGE ECONOMY

Although the term “knowledge economy” is widely used, there does not really seem to be a single agreed-upon definition of the term. Instead, at least three alternative concepts of the knowledge economy have been forwarded:

1. The part of the economy involved in the production and distribution of knowledge. This concept of the knowledge economy comes from Fritz Machlup, whose 1962 study analyzed the production and distribution of knowledge in the United States. While his work has generated wide and continued interest in the economics of knowledge and information, current references to the knowledge economy are much more likely to involve a broader definition. The more popular uses of the term might actually be better described by the expression “knowledge-based economy” to distinguish from the narrower definition.

2. The part of the economy composed of knowledge-intensive industries. This concept divides the economy into two sectors: (a) the knowledge-intensive sector made up of those industries whose firms employ advanced technologies and have highly educated and skilled workforces, and (b) the sector that is not knowledge intensive, composed of industries with less educated/skilled workforces that use “traditional” production processes.

3. The characterization of an entire economy in which the production, distribution, and use of knowledge plays a key role throughout the economy. Knowledge-based growth involves not just the creation of new sectors but the internal transformation of sectors that already exist. Focusing on only the high-technology sector or so-called knowledge-intensive industries because they are perceived to be where new ideas are discovered and new technology is developed ignores reality. Just because modern economies are more knowledge intensive, this does not necessarily mean that only some sectors are participants in the knowledge economy.

It might well be argued that the growth trajectories of advanced economies depend as much on so-called “low-tech” sectors such as the production of food, wood products, and vehicles as on radically new sectors like information technology (IT) or biotech. Many new industries have grown rapidly, but from a very low base. They still provide only a low share of total economic output.

CHARACTERISTICS OF THE KNOWLEDGE ECONOMY

Economics of Knowledge Knowledge has three characteristics that have very important implications for the knowledge economy: it can be used over and over without being consumed by that use, it can be used by many individuals at the same time, and it can be used in many different locations simultaneously.

The economics of knowledge are very different than for ordinary goods and services. Knowledge can produce economic value not only to its creator, but through diffusion of the knowledge there is also the potential for it to produce economic value for many other users. Thus, the overall value of knowledge to society increases when it is shared and used by others.

To the extent that diffusion of knowledge can be restricted, it is often in the interest of the creator or original owner of knowledge to restrict its use for private gain. The creator or original owner also may gain private economic value from selling or licensing the knowledge for use by others. Given its unique characteristics, the potential private gains can be large, since it could be sold or licensed to a large number of other users. Thus, a conflict exists between private property rights and the social value of the diffusion of knowledge.

Because the value to society of knowledge is often much greater than the private economic value to its creator or owner leads to another difference between knowledge and ordinary goods and services: a wide divergence can exist between the private return on investment to create knowledge and the return on investment from society's point of view. The more that the knowledge is distributed and put to more and more uses, the greater is the social return on investment in knowledge.

The Information Revolution The information revolution brought about by advances in computing and information/communications technologies allows the storage, management, and transmission of information at a very low cost. The distribution of these technologies has been pervasive, to all economic sectors and around the world. As a result, the world's stock of knowledge is much more accessible than in the past, making it much easier to undertake knowledge-based activities anywhere in the world. These developments stimulate increases in knowledge-based economic activity and acceleration in the creation of new knowledge, both of which have positive impacts on economic growth.

Globalization A rapid globalization of economic activity has occurred. Reductions in tariffs and nontariff barriers and deregulation of markets in many countries have spurred international trade flows of goods and services. The deregulation of financial markets and the reduction of barriers to foreign direct investment (FDI) and other international capital flows have led to the integration of world financial and capital markets and increasing flows of FDI and other capital to developing countries. One result of these trends has been the development of a global knowledge economy. Firms in the United States and other developed nations have expanded their business operations globally, and indigenous knowledge-intensive sectors have grown rapidly in many countries around the world.

Tacit and Explicit Knowledge Much of the stock of knowledge is explicit knowledge — information in printed or electronic form that can be easily transferred and shared with others. The process of transforming knowledge into explicit knowledge is often referred to as “codification,” and explicit knowledge is also known as codified knowledge. On the other hand, some types of knowledge involve learning and skill that cannot be codified or easily shared. This is often referred to as tacit knowledge. The tacit aspects of knowledge are those that can only be transmitted via training or gained through personal experience. For example, printed plans for a bicycle are a form of codified knowledge, but the skill or knowledge of how to ride a bicycle is tacit knowledge.

The information/communication revolution has led to a global knowledge economy, where explicit knowledge can be easily transferred and put to use almost anywhere around the world. But at the same time, tacit knowledge is very local in character and is difficult to transfer without personal interaction. This is especially true of recently created knowledge. In many cases, newly created knowledge is tacit and difficult to codify. The knowledge is embodied in the human capital of the discoverer(s) and only can be transferred to others through personal working relationships with the individual(s).

Social networks play an important role in the diffusion of information and knowledge since they provide the formal connections and informal linkages through which information and ideas flow among individuals. Concentrating people engaged in related activities in a particular location thus creates an environment that facilitates the rapid and effective diffusion of ideas. Much of

Silicon Valley's success, for example, has been attributed to its informal networks of friendship and collaboration among scientists, engineers, and entrepreneurs in the area.

The characteristics of tacit knowledge that tend to concentrate knowledge creation and innovative activities, together with forces economists term agglomeration economies, often lead to the clustering of knowledge-based firms and knowledge workers near the location where the new idea was originally developed. Again, the prime example of this phenomenon is Silicon Valley.

Agglomeration economies are a powerful force that helps explain the advantages of the "clustering effect" of many activities ranging from retailing to transport terminals. Agglomeration economies consist of three major categories •

Urbanization economies: benefits derived from the agglomeration of population, namely common infrastructures (e.g. utilities or public transit) and the availability and diversity of labor and market size. • Industrialization economies: benefits derived from the agglomeration of industrial activities, such as to their respective suppliers or customers. • Localization economies: benefits derived from the agglomeration of a set of activities near a specific facility, such as a transport terminal (logistics parks), a seat of government (lobbying, consulting, law) or a large university (technology parks). More generally, the combination of agglomeration economies and tacit knowledge leads to concentrations of knowledge-intensive industries and of knowledge workers in metropolitan areas.

Embodied and Disembodied Technology is the term for the knowledge associated with the development, design, production, and application of products, processes, and services. The term also is often used to refer to the products, processes, and services themselves. Technology is usefully categorized in two forms. Disembodied technology is codified knowledge, such as patents, technical reports, manuals, databases, etc. Embodied technology is incorporated in new or improved products, processes, and services. Embodied technology is a primary way in which new knowledge is distributed and employed in the knowledge economy. Investment in new capital equipment and/or use of new services that embody technological advances is a key mechanism for increasing the knowledge intensity of existing businesses or other activities.

Implications The unique economic characteristics of knowledge and the information revolution have been key factors underlying acceleration in the rate of knowledge accumulation, which in

turn has stimulated increases in the knowledge intensity of the U.S. economy. The production of new knowledge (measured by research and development activity) and increased educational attainment accounted for more than 80 percent of U.S. economic growth in the post-World War II era. Thus it is not exaggerating to say that the high standard of living in the United States is in large part the result of the productivity of well-trained people and the growing stream of scientific and technical innovations that they have developed.

The information revolution and the transition to a knowledge economy have been accompanied by increased globalization. Explicit knowledge flows more quickly and widely than ever before. Paradoxically, the key role of tacit knowledge in the innovation process leads to geographic concentration of the processes of knowledge creation and innovation. That in turn leads to clustering of knowledge-based firms and knowledge workers, usually in metropolitan areas.

While globalization has provided opportunities for U.S. firms, the emergence of the global knowledge economy presents real challenges to the economic leadership that the United States has enjoyed since World War II. The processes that the United States has relied upon to produce economic growth and prosperity — the creation of new knowledge and investment in human capital and advanced technology — will surely continue, but similar processes are occurring around the globe. Concerns have been increasing about how the United States can successfully compete and prosper in the global community of the 21st century, and the business community, government officials, and other policymakers are working to develop policies aimed at strengthening and stimulating the U.S. knowledge economy (see for example Task Force on the Future of American Innovation 2005, National

KEY ROLE OF COLLEGES AND UNIVERSITIES IN THE KNOWLEDGE ECONOMY

Colleges and universities perform two fundamental functions in the knowledge economy: producing human capital and creating new knowledge.

Producing Human Capital The U.S. higher education system (including two-year, four-year, and graduate institutions) produces the highly educated workers needed in the knowledge economy. They also train the educators that are a key ingredient for elementary and secondary education.

University graduate programs have multiple roles. They produce the scientists, engineers, and other highly skilled individuals that are the research workers in industry, research labs, and universities. Graduate programs also turn out individuals with doctorate degrees (Ph.D.s) that in turn join the faculties of other colleges and universities and educate succeeding generations of undergraduate and graduate students.

Knowledge Creation Colleges and universities, particularly research universities, create knowledge. Hoffman (2008) identified six benefits from university research: • Expansion of the stock of knowledge. • Training of future researchers. • Creation of new instrumentation and methodologies. • Formation of networks and stimulation of social interaction. • Increases in the capacity for scientific and technological problem solving. • Creation of new firms.

Regional Economic Development While many of the contributions of colleges and universities to the knowledge economy are distributed widely, their educational and research activities also benefit the local region in which they are located.

Credit IV

Mineral resources of j and k

Mineral Resources :

There is a wide scope of Mineral Resources in J&K State. The important minerals are Limestone, Gypsum, Dolomite, Quartzite besides building stones like, Slate, Marble, Granite etc.

Industry potential :

A lot of mineral based industries are established in the state. The detail list of the minerals is as:

Details of Minerals in J&K State :

Mineral	Occurrence	Reserves	Uses	No. of Mining Leases granted
Limestone	All districts of Valley, Kathua, Udhampur, Rajouri, Poonch, Kargil and Leh	6081 Million tonnes	Manufacture of Cement, Calcium Carbide, Quicklime, Bleaching-Powder, Glass, Paper, paints	37
Gypsum	Baramullah, Kathua, Ramban and Doda Distt.	150 Million tonnes	Cement, fertilizer, Filler in Paper, Paints, Rubber, Textile industry, Plaster of Paris & sanitary ware,	19
Marble	Kupwara, Kargil, Leh	400 Million Cubic mtrs	Decorative building stone.	1 (and 4 in pipeline)
Granite	Kargil, Leh, Ganderbal, Baramullah, Poonch and Doda	5.2 Million Cubic mtrs. However, stretched over an area of 800 sqkms	Decorative building stone.	Nil
Bauxite	Udhampur and Ramban	8.6 Million tonnes	Manufacture of aluminum, aluminum products, and aircraft industry	1
Coal	Udhampur, Rajouri (Kalakot)	9.5 Million tonnes	As fuel	1
Lignite	Nichome, Handwara, Distt Kupwara	8 Million tonnes	Thermal power and low grade fuel	Nil
Magnesite	Udhampur	7 Million tonnes	Refractory Bricks for furnaces . Pharmaceuticals	1
Slates	Poonch, Kathua, Doda and Baramullah	9.6 Million cubic mtrs	Building Material	Nil
Sapphire	Doda (Paddar)	2 kms mineralized zone	Precious Stone	1
Quartzite	Anantnag, Baramullah and Kupwara	2 Million tonnes	Glass & IT industry	Nil
Borax	Puga valley, Leh	400 tonnes annual crop	Medicine, glass, ceramics, nuclear industry, rocket fuel	1

Dolomite	Rajouri,Udhampur, Reasi	12.37 Million tonnes	Refractory bricks	Nil
China clay	Doda,Udhampur	28 Million tonnes	Ceramics, pottery	1
Graphite	Baramullah	62 Million tonnes	Crucibles, foundary, refractory, paints	

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Energy resources of j and k

The union territory of j and k is deficient in non-renewable resources of energy. But it has been endowed with a tremendous potential for hydro electricity generation .the theoretical hydro electricity potential of the UT is about 20000 MW out of it roughly 16200 has been already been identified. The first hydro power project commissioned in the state in 1905 (Mohra) at Baramulah since then this industry has developed at enormous pace. [Jammu and Kashmir](#) has a potential to produce 16,475 MW of hydro power as per the assessment made by [Central Electricity Authority](#) (CEA) 11,283 MW of hydro power can be produced on river Chenab, followed by 3,084 MW on river Jhelum and 1,608 MW on [Indus](#) river. A total of 3,263.46 MW has been harnessed on three western rivers from Jhelum, Chenab and Indus through state, central and public private partnership.

Existing projects in J and K

Name of Power House	Installed Capacity in MW
STATE SECTOR	
Jhelum River Basin	
Lower Jhelum	105
Upper Sindh-I	22.6
Ganderbal	15
Upper Sindh-II	105
Pahalgam	4.5
Karnah	2
Chenab Basin	
Chenani-I	23.30
Chennai-II	2
Chenani-III	7.50
Bhaderwah	1.5
Baglihar	900
Ravi Basin	
Sewa-III	9
Indus Basin	
Iqbal	3.75
Hunder	0.40
Sumoor	0.10
Igo-Mercellong	3
Haftal	1
Marpachoo	0.75
Bazgo	0.30
Stakna	4
Sanjak	1.26
Total: 1211.96 MW	

Name of Power House		Installed Capacity in MW
CENTRAL SECTOR		
Salal HEP		690
Uri -I		480
Dul-Hasti		390
Uri-II		240
Chutak		44
Nimo-Bazgoo		45
Sewa-II		120
Total: 2009 MW		

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