

UPSC
NCERT Summary:
Sugar Industry

The sugar industry is the second most important agro-based industry in the country. India is the largest producer of both sugarcane and cane sugar and contributes about 8 per cent of the total sugar production in the world. Besides, khandasari and gur or jaggery are also prepared from sugarcane. This industry provides employment for more than 4 lakh persons directly and a large number of farmers indirectly. Sugar industry is a seasonal industry because of the seasonality of raw materials.

Development of the industry on modern lines dates back to 1903, when a sugar mill was started in Bihar. Subsequently, sugar mills were started in other parts of Bihar and Uttar Pradesh. In 1950-51, 139 factories were in operation producing 11.34 lakh tones of sugar. The number of sugar factories rose to 506 and production to 176,99 lakh tones in 2000-01.

Location of the Sugar Industry Sugarcane is a weight-losing crop. The ratio of sugar to sugarcane varies between 9 to 12 per cent depending on its variety. Its sucrose content begins to dry during haulage after it has been harvested from the field. Better recovery of sugar is dependent upon its being crushed within 24 hours of its harvesting. Sugar factories hence, are located within the cane producing regions. Maharashtra has emerged as 2nd largest producer in the country and produces nearly 18.96% of the total production of the sugar in the country. There are 119 sugar mills in the state in a narrow belt extending from Manmad in the north to Kolhapur in the south. There are 87 mills in the cooperative sector.

Uttar Pradesh is the largest producer of sugar and produces nearly 46.27% of the sugar in the country. The sugar factories are concentrated in two belts- the Ganga-Yamuna doab and the tarai region. The major sugar producing centres in the Ganga-Yamuna doab are Saharanpur, Muzaffarnagar, Meerut, Ghaziabad, Baghpat and Bulandshehr districts; while Kheri Lakhimpur, Basti, Gonda, Gorakhpur, Bahraich are important sugar producing districts in the Tarai region.

In Tamil Nadu, sugar factories are located in Coimbatore, Vellore, Tiruvanamalai, Villupuram and Tiruchchirappalli districts. Belgaum, Bellary, Mandya, Shimoga, Bijapur, and Chitradurg districts are the major producers in Karnataka. The industry is distributed in the coastal regions i.e. East Godawari, West Godavari, Vishakhapatnam districts and Nizamabad, and Medak districts of Telangana alongwith Chittoor district of Rayalseema.

The other States which produce sugar are Bihar, Punjab, Haryana, Madhya Pradesh and Gujarat. Saran, Champaran, Muzaffarnagar, Siwan, Darbhanga, and Gaya are the important sugarcane producing districts in Bihar. The relative significance of Punjab has declined, although Gurdaspur, Jalandhar, Sangarur, Patiala and Amritsar are major sugar producers. In Haryana, sugar factories are located in Yamuna Nagar, Rohtak, Hissar and Faridabad districts. Sugar industry is comparatively new in Gujarat. Sugar mills are located in the cane growing tracts of Surat, Junagarh, Rajkot, Amreli, Valsad and Bhavnagar districts.

PETROCHEMICAL INDUSTRIES

This group of industries has been growing very fast in India. A variety of products come under this category of industries. In 1960s, demand for organic chemicals increased so fast that it became difficult to meet this demand. At that time. Petroleum refining industry expanded rapidly. Many items are derived from crude petroleum, which provide raw materials for many new industries; these are collectively known as petrochemical industries. This group of industries is divided into four subgroups;

- (i) polymers,
- (ii) synthetic fibres, This group of industries
- (iii) elastomers, and
- (iv) surfactant intermediate.

Mumbai is the hub of the petrochemical industries. Cracker units are also located in Auraiya (Uttar Pradesh), Jamnagar, Gandhinagar, and Hajira (Gujarat), Nagothane, Ratnagiri (Maharashtra), Haldia (West Bengal) and Vishakhapatnam (Andhra Pradesh).

Three organizations are working in the petrochemical sector under the administrative control of the Department of Chemicals and Petrochemicals. First is the Indian Petrochemical Corporation Limited (IPCL), a public sector undertaking. It is responsible for the manufacture and distribution of the various petrochemicals like polymers, chemicals, fibres and fibre intermediates. Second is the Petrofils Cooperative Limited (PCL), a joint venture of the Government of India and Weaver's Cooperative Societies. It produces polyester filament yarn and nylon chips at its two plants located at Vadodara and Naldhari in Gujarat. Third is the Central Institute of Plastic Engineering and Technology (CIPET), involved in imparting training in petrochemical industry.

Polymers are made from ethylene and propylene. These materials are obtained in the process of refining crude oil. Polymers are used as raw materials in the plastic industry. Among polymers, polyethylene is a widely used thermoplastic. Plastic is first covered into sheets, power, resin and pellets, and then used in manufacturing plastic products. Plastic products are preferred because of their strength, water and chemical resistance and low prices. Production of plastic polymers started in India

in the late fifties and the early sixties using other organic chemicals. The National Organic Chemicals Industries Limited (NOCIL), established in private sector in 1961, started the first naphtha based chemical industry in Mumbai. Later, several other companies were formed. The plants located at Mumbai, Barauni, Mettur, Pimpri and Rishra are major producers of plastic materials.

About 75 per cent of these units are in small scale sector. The industry also uses recycled plastics, which constitutes about 30 per cent of the total production. Synthetic fibres are widely used in the manufacturing of fabrics because of their inherent strength, durability, wash ability, and resistance to shrinkage. Industries manufacturing nylon and polyester yarns are located at Kota, Pimpri, Mumbai, Modinagar, Pune, Ujjain, Nagpur and Udhna. Acrylic staple fibre is manufactured at Kota and Vadodara.

Though plastics have become inseparable items in our daily use and they have affected our life style. But due to its non-biodegradable quality it has emerged as the greatest threat to our environment. Hence, use of plastic is being discouraged in different states of India.

KNOWLEDGE BASED INDUSTRIES

The advancement in information technology has had a profound influence on the country's economy. The Information Technology (IT) revolution opened up new possibilities of economic and social transformation. The IT and IT enabled business process outsourcing (ITESBPO) services continue to be on a robust growth path. Indian software industry has emerged as one of the fastest growing sectors in the economy. Exports of the Indian software and services sector were Rs. 78,230 crore in 2004- 05 which is approximately 30-32 per cent increase from the previous year. The software industry has surpassed electronic hardware production. The Indian government has created a number of software parks in the country.

The IT software and services industry account for almost 2 per cent of India's GDP. India's software industry has achieved a remarkable distinction for providing quality products. A large number of Indian software companies have acquired international quality certification. A majority of the multinational companies operating in the area of information technology have either software development centres or research development centres in India. However, in the hardware development sector, India is yet to make any remarkable achievements.

A major impact of this growth has been on employment creation, which is almost doubled every year.

Liberalization, Privatization, Globalization (LPG) and Industrial Development in India

The new Industrial Policy was announced in 1991. The major objectives of this policy were to build on the gains already made, correct the distortions or

weaknesses that have crept in, maintain a sustained growth in productivity and gainful employment and attain international competitiveness.

Within this policy, measures initiated are: (1) abolition of industrial licensing, (2) free entry to foreign (technology, (3) foreign investment policy, (4) access to capital market, (5) open trade, (6) abolition of phased manufacturing programme, and (7) liberalized industrial location programme. The policy has three main dimensions: privatization and globalization.

The industrial licensing system has been abolished for all except six industries related to security, strategic or environmental concerns. At the same time, the number of industries reserved for public sector since 1956 have been reduced from 17 to 4.

Industries related to atomic energy substances specified in the schedule of the Department of Atomic Energy as well as Railways have remained under the public sector. The government also have decided to offer a part of the shareholdings in the public enterprises to financial institutions, general public and workers. The threshold limits of assets have been scrapped and no industry required prior approval for investing in the delicensed sector. They only need to submit a memorandum in the prescribed format.

In the new industrial policy, Foreign Direct Investment (FDI) has been seen as a supplement to the domestic investment for achieving a higher level of economic development. FDI benefits the domestic industry as well as the consumers by providing technological upgradation, access to global managerial skills and practices, optimum use of natural and human resources, etc. Keeping all this in mind, foreign investment has been liberalized and the government has permitted access to an automatic route for Foreign Direct Investment. The government has also announced changes in the industrial location policies. Industries are discouraged in or very close to large cities due to environmental reasons.

The industrial policy has been liberalized to attract private investor both domestic and multinationals. New sectors like, mining, telecommunication, highway construction and management have been thrown open to private companies. In spite of all these concessions, Foreign Direct Investment has not been up to the expectation. There has been a big gap between approved and actual foreign direct investment, even though the numbers of foreign collaborations are increasing. Larger parts of this investment have gone to domestic appliances, finance, services, electronics and electrical equipment, and food and dairy products.

Globalization means integrating the economy of the country with the world economy. Under this process, goods and services along with capital, labour and resources can move freely from one nation to another. The thrust of globalization has been to increase the domestic and external competition through extensive application of market mechanism and facilitating dynamic relationship with the foreign investors and suppliers of technology. In Indian context, this implies: (1) opening of the economy to foreign direct investment by providing facilities to

- foreign companies to invest in different fields of economies activity in India;
- (2) removing restrictions and obstacles to the entry of multinational companies in India;
 - (3) allowing Indian companies to enter into foreign collaboration in India and also encouraging them to set up joint ventures abroad;
 - (4) carrying out massive import liberalization programs by switching over from quantitative restrictions to tariffs in the first place and then bringing down the level of import duties considerably; and
 - (5) instead of a set of export incentives, opting for exchange rate adjustments for promoting export.

INDUSTRIAL REGION AND DISTRICTS

Major Industrial Regions (8)

1. Mumbai-Pune Region,
2. Hugli Region,
3. Bangalore-Tamil Nadu Region,
4. Gujarat Region,
5. Chotanagpur Region,
6. Vishakhapatnam-Guntur Region,
7. Gurgaon-Delhi-Meerut Region and
8. Kollam-Tiruvantapuram Region.

Minor Industrial Regions (13)

1. Ambala-Amritsar,
2. Saharanpur-Muzaffarnagar-Bijnor,
3. Indore-Dewas-Ujjain,
4. Jaipur-Ajmer,
5. Molhapur-South Kannada,
6. Northern Malabar,
7. Middle Malabar,
8. Adilabad-Nizamabad,
9. Allahabad-Varanasi-Mirzapur,
10. Bhojpur-Munger,
11. Durg-Raipur,
12. Bilaspur-Korba, and
13. Brahmaputra valley.

Industrial Districts (15)

1. Kanpur,
2. Hyderabad,

3. Agra,
4. Nagpur,
5. Gwalior,
6. Bhopal,
7. Lucknow,
8. Jalpaiguri,
9. Cuttak,
10. Gorakhpur,
11. Aligarh,
12. Kota,
13. Purnia,
14. Jabalpur, and
15. Bareilly.

A breakup of foreign collaboration approval reveals that the major share went to core, priority sectors while infrastructural sector was untouched. Further, gap between developed and developing states has become wider. Major share of both domestic investment as well as foreign direct investment went to already developed states. For example, out of the total proposed investment by the industrial entrepreneurs during 1991-2000 nearly one fourth (23 per cent) was for industrially developed Maharashtra, 17 per cent for Gujarat, 7 per cent for Andhra Pradesh, and about 6 per cent for Tamil Nadu while Uttar Pradesh, the state with the largest population has only 8 per cent. In spite of several concessions, seven north-eastern states could get less than 1 per cent of the proposed investment. In fact, economically weaker states could not compete with the developed states in open market in attracting industrial investment proposals and hence they are likely to suffer from these processes.

INDUSTRIAL REGIONS IN INDIA

Industries are not evenly distributed in the country. They tend to concentrate on certain locations because of the favourable locations factors.

Several indices are used to identify the clustering of industries, important among them are:

- (i) the number of industrial units,
- (ii) number of industrial workers,
- (iii) quantum of power used for industrial purposes,
- (iv) total industrial output, and
- (v) value added by manufacturing etc.

Major industrial regions of the country are given below in some details.

Mumbai-Pune Industrial Region: It extends from Mumbai-Thane to Pune and in adjoining districts of Nasik and Solapur. Besides, industrial development has been

rapid in Kolaba, Ahmednagar, Satara, Sangli and Jalgaon districts. Development of this region started with the location of cotton textile industry in Mumbai. Mumbai, with cotton hinterland and moist climate favoured the location of cotton textile industry. Opening of the Suez Canal in 1869 provided impetus to the growth of Mumbai port. Machineries were imported through this port. Hydro electricity was developed in the Western Ghat region to meet requirements of this industry. With the development of cotton textile industry, chemical industry also developed. Opening of the Mumbai High petroleum field and erection of nuclear energy plants added additional pull to this region.

Besides, engineering goods, petroleum refining, petrochemicals, leather, synthetic and plastic goods, drugs, fertilizers, electrical, shipbuilding, electronics, software, transport equipments and food industries also developed. Important industrial centres are Mumbai, Kolaba, Kalyan, Thane, Trombay, Pune, Pimpri, Nasik, Manmad, Solapur, Kolhapur, Ahmednagar, Satara and Sangli.

Hugli Industrial Region: Located along the Hugli river, this region extends from Bansberia in the north to Birlanagar in the south for a distance of about 100 km. Industries also have developed in Mednipur in the west. Kolkata- Howrah from the nucleus of this industrial region. Historical, geographical, economic and political factor have contributed much to its development. It developed with the opening of river port on Hugli. Kolkata, emerged as a leading centre of the country, Later, Kolkata was connected with interior parts by railway lines and road routes. Development of tea plantations in Assam and northern hills of West Bengal, the processing of indigo earlier and jute later coupled with the opening of coalfields of the Damodar Valley and iron ore deposits of the Chotanagpur plateau, contributed to the industrial development of the region. Cheap labour available from thickly populated part of Bihar, eastern Uttar Pradesh and Orissa also contributed to its development. Kolkata, being the capital city of British India (1773-1911), attracted the British capital. The establishment of first jute mill at Rishra in 1855 ushered in the era of modern industrial clustering in this region.

The major concentration of jute industry is at Howrah and Bhatapara. The partition of the country in 1947 adversely affected this industrial region. Cotton textile industry also grew along with jute industry, paper, engineering, textile machinery, electrical, chemical, pharmaceuticals, fertilizer and petrochemical industries have also developed within this region. Factory of the Hindustan Motors Limited at Konnagar and diesel engine factory at Chittaranjan are landmarks of this region. Location of petroleum refinery at Haldia has facilitated the development of a variety of industries. Important, industrial centres of this region are Kolkata, Haora, Haldia, Serampur, Rishra, Shibpur, Nahati, Kakinara, Shamnagar, Titagarh, Sodepur, Budge Budge, Birlanagar, Bansberia, Belgurriah, Triveni, Hugli, Belur, etc. However, industrial growth of this region has slowed down in comparison to other regions. Decline of the jute industry is one of the reasons.

Bangalore-Chennai Industrial Region: This region witnessed most rapid industrial growth in post-Independence period. Till 1960, industries were confined to Bangalore, Salem and Madurai districts but now they have spread over all the districts of Tamil Nadu except Viluppuram. Since, this region is away from the coalfields, its development is dependent on the Pykara hydroelectric plant, which was built in 1932. Cotton textile industry was the first to take roots due to the presence of cotton growing areas. Along with cotton mills, loom industry spread very rapidly. Several heavy engineering industries converged at Bangalore. Aircraft (HAL), machine tools, telephone (HTL) and Bharat Electronics are industrial landmarks of this region. Important industries are textiles rail wagons, diesel engines, radio, light engineering goods, rubber goods, medicines, aluminum, sugar, cement, glass, paper, chemicals, film, cigarette, match box, leather goods, etc. Petroleum refinery at Chennai, iron and steel plant at Salem and fertilizer plants are recent developments.

Gujarat Industrial Region: The nucleus of this region lies between Ahmedabad and Vadodara but this region extends upto Valsad and Surat in the south and to Jamnagar in the west. Development of this region is also associated with the location of the cotton textile industry since 1860s. This region became an important textile region with the decline of the cotton textile industry at Mumbai.

Located in cotton growing area, this region has double advantage of the proximity of raw materials as well as of market. The discovery of oil fields led to the establishment of petrochemical industries around Ankleshwar, Vadodara and Jamnagar. The port at Kandla helped in the rapid growth of this region. Petroleum refinery at Koyali provided raw materials to a host of petrochemical industries. The industrial structure is now diversified. Besides, textiles (cotton, silk and synthetic fabrics) and petrochemical industries, other industries are heavy and basic chemicals, motor, tractor, diesel engines, textile machinery, engineering, pharmaceuticals. Dyes, pesticides, sugar, dairy products and food processing. Recently, largest petroleum refinery has been set up at Jamnagar. Important industrial centres of this region are Ahmedabad, Vadodara, Bharuch, Koyali, Anand, Khera, Surendranagar, Rajkot, Valsad and Jamnagar.

Chotanagpur Region: This region extends over Jharkhand, northern Orissa and western West Bengal and is known for the heavy metallurgical industries. This region owes its development to the discovery of coal in the Damodar Valley and metallic and non-metallic in Jharkhand and northern Orissa. Proximity of coal, iron ore and other minerals facilitated the location of heavy industries in this region. Six large integrated iron and steel plants at Jamshedpur, Burnpur-Kulti, Durgapur, Bokaro and Rourkela are located within this region. To meet the power requirement, thermal and hydroelectric plants have been constructed in the Damodar Valley. Densely populated surrounding regions provide cheap labour and

Hugli region provides vast market for its industries. Heavy engineering, machine tools, fertilizers, cement, paper, locomotives and heavy electrical are some of the important industries in this region. Important centres are Ranchi, Dhanbad, Chaibasa, Sindri, Hazaribag, Jamshedpur, Bokaro, Rourkela, Durgapur, Asansol and Dalmianagar.

Vishakhapatnam-Guntur Region: This industrial region extends from Vishakhapatnam district to Kurnool and Prakasam districts in the south. Industrial development of this region hinges upon Vishakhapatnam and districts in the south. Industrial development of this region hinges upon Vishakhapatnam and Machilipatnam ports and developed agriculture and rich reserves of minerals in their inter lands. Coalfields of the Godavari basin provide energy. Ship building industry was started at Vishakhapatnam in 1941. Petroleum refinery based on imported petroleum facilitated the growth of several petrochemical industries. Sugar, textile, jute, paper, fertilizer, cement, aluminum and light engineering are principal industries of this region. One lead-zinc smelter is functioning in Guntur district. Iron and steel plant at Vishakhapatnam uses the Bailadila iron ore. Vishakhapatnam, Vijayawada, Vijaynagar, Rajahmundry, Guntur, Eluru and Kurnool are important industrial centres.

Gurgaon-Delhi-Merrut Region: Industries located in this region have shown very fast growth in the recent past. This region is located far away from the mineral and power resources, and therefore, the industries are light and market-oriented. Electronics, light engineering and electrical goods are major industries of this region.

Besides, there are cotton, woolen and synthetic fabrics, hosiery, sugar, cement, machine tools, tractor, cycle, agricultural implements, chemical and vanaspati industries which have developed on large scale. Software industry is a recent addition. To the south lies the Agra-Mathura industrial area which specializes in glass leather goods. Mathura with an oil refinery is a petrochemical complex. Among industrial centres, mention be made Gurgaon, Delhi, Shahdara, Faridabad, Meerut, Modinagar, Ghaziabad, Ambala, Agra and Mathura.

Kollam-Tiruvananthapuram Region: The industrial region is spread over Tiruvananthapuram, Kollam, Alwaye, Ernakulam and Alappuzha districts. Plantation agriculture and hydropower provide industrial base to this region. Located far away from the mineral belt of the country, agricultural products processing and market oriented light industries predominate the region.

Among them, cotton textile, sugar, rubber, matchbox, glass, chemical fertilizer and fish-based industries are important. Food processing, paper, coconut coir products, aluminum and cement industries are also significant. Location of petroleum refinery at Kochi has added a vista of new industries to this region. Important of petroleum centres are Kollam, Tiruvananthapuram, Alluva, Kochi, Alappuzha, and Punalur.

