CHAPTER - 6 GEOGRAPHY

MANUFACTURING INDUSTRIES

IMPORTANCE OF MANUFACTURING

→ Reduces the dependence of people on Agriculture income.
→ Industrial development, a pre-condition for eradication of unemployment and poverty
→ Export brings much needed foreign exchange.
→ Manufacturing provided higher value for good to a country [Prosperity]

AGRICULTURE and Industries

→ Not exclusive of each other. Moves hand to hand.

→ Increased productivity and made production process efficient

Globalisation → Global competition - Self sufficiency is not enough our goods must be at par with International market

Industrial Location.

→ Influenced by many factors.
→ availability of raw material, labour, capital, Power, Market Govt. Policy.
→ Selecting an appropriate location is must.
→ Industrialisation and urbanization goes hand in hand.
→ Cities provide market and services.

Agglomeration Economies

→ Pre Independance Industrial location and difference
→ Coastal areas to Hinterland.

Classification of Industries

1) On the basis of source of raw material

i) Agro-based → cotton, woollen, jute, silk, rubber, and sugar etc.

ii) Mineral based

Iron and steel, Cement, aluminium machine, tools and Petrochemicals.

2) According to their main role

i) Basic or key Industries:
Supply their product or raw material to manufacturing other goods eg iron and steel.

ii) Consumer Industries
→ Produces goods for direct use by consumers eg sugar, Paper, toothpaste etc.

3) On the basis of Capital Investment

(i) Small scale Industries
→ less than one crore.
→ Toy Industries

(ii) Large scale Industries
→ one crore or more than one crore
→ Iron and steel Industries.
→ limit change over a period of time

Classification of Industries - II

4) On the basis of ownership

(i) Public sector → owned and operated by government eg BHEL
(ii) Private sector → owned and operated Individual or group of Individual eg TISCO
(iii) Joint sector → Jointly run state and Individuals or group of Individual. eg Oil India ltd.
(iv) Cooperated sector → owned and operated by Producers and supplier of raw material eg Sugar Industries in Maharastra, AMUL.

5) Based on the bulk and weight of raw material and finished goods

(i) Heavy Industries → Iron and steel.
(ii) Light Industries → Electrical Industries.

Agro-based Industry

Textile Industry:

- Contribution in Industrial Production 14%.
- Employment generation [35m]
- Foreign exchange [24.6%]
- Contribution in GDP [4%].

Cotton Textile

- first successful cotton mill was established in Mumbai in 1854.
- Hand spinning and handloom weaving → Powerloom
- Localisation of textile Industries in Gujrat and Maharastra because Availibility of raw cotton, market transport [Port], labour, Moist climate etc.

Textile Industries

Farmers, workers

Industries [chemical and dye, mill stores, packaging]

Challenges to cotton textile Industries

* Spinning v/s weaving
* Erratic power supply.
* low out-put of labour.
* Stiff competition with the synthetic fibre industry.

Jute Textile

* Largest producer of raw jute and second largest exporter after Bangladesh.
* After Partition in 1947, the Jute mills remained in India but three-fourth on the Jute Producing area went to Bangladesh
* Most of the Indian Jute mills are located in west Bengal, Near Hugli River., First Jute Hill Near Kolkata, in 1859 at Rishra.

Reasons

* Proximity to Jute Producing area
* Inexpensive water transport.
* Abundance of water for processing raw Jute.
* Good network of railways.
* Cheap labour.

Challenges

(i) Stiff competition by synthetic substitutes.
(ii) Competition from International competitors like Bangladesh, Brazil, Egypt and thailand.
(iii) High coast.

National Jute policy

→ It had increased Internal demand for Jute.

→ Government had made it mandatory to use Jute for packaging.

→ Objective was to increase productivity/cultivation of Jute and ensure good Prices to Jute farmers.

Sugar Industry

India - second largest producer of sugar and largest Producer of Gur and Khandsari]

→ Bulky raw material, sucrose content reduces with time

→ Hence Industries should be situated near sugarcane Producing area

→ 60% Mills are in U.P and Bihar.

→ Seasonal in nature, ideally suited to Cooperative Industry

→ Increase in no. of mills in Southern and western States because of favrable condition.

Challenges

- Seasonal in nature
- Old and inefficient Method of Production
- Transportation delays.
- Maximise use of Baggasse

Mineral based Industry

Iron and steel Industry

*It is basic Industry because of dependence of other industries over it.

*India rank 9th among the world crude steel Producers

* Largest Producer of Sponge iron.

* But per capita consumption is only 32 kg annually
* Presently there are 10 Primary Integrated and Many steel Plant
* In 1950, china and India Produced almost the same quality of steel.
* Chotanagpur plateau has the maximum concentration of Iron and Steel Industry.

Challenges

* High costs and limited availibilty of coking coal.
* Lower productivity of labour.
* Irregular supply of Energy.
* Poor Infrastructure.

Aluminium Smelting

* Second most important metallurgical Industry.
* light, resistant to corrosion, good conductor of heat, Mallable and becomes Stoong when mixed with other metal.
* Major 8 aluminium smelting plants in country, NALCO, BALCO in Orissa, in other states like W.B. KR. U.P. Chattisgarh, Maharashtra and T.N.
* Bauxite → Alumina — Aluminium
* Regular supply of electricity and assured source of raw material at minimum cost.

Chemical Industries

It comprises of both large and small scale manufacturing industries.

Inorganic	Organic
* Sulphuric acid, Nitric acid, alkaloids, Soda Ash	Petrochemical like Rubber, Plastic, dye-stuffs drugs, and Pharmaceuticals.

→ It's own largest consumer.
→ undergoes processing to further produce other chemicals.

Fertiliser Industry

* Most of the Industries are centered around the production of nitrogenous fertilisers (urea) phosphatic fertilizers and ammonium phosphate
* Potash is imported in our country.
* Third largest Producer of Nitrogenous fertilizers
* Industry ↑ after green revolution
* Prominent in the areas of Gujrat, T.N, UP, and Kerala.

Cement Industry

* Essential for construction activity, building houses, factories, bridges etc.
* This industry requires bulky and heavy raw material like limestone, silica etc.
* Coal and electric power along with transportation [Railways]
* Situated in Gujrat and Coastal area because of accessibility to Gulf Countries.
* First cement plant → Chennai, 1904
* Reforms such as Decontrol of Price and Distribution ↑ses the capacity of Industry.
* Doing well in terms of Production as well as export.

Automobile Industry

* This Industry provides base for Transport [Goods and Passenger] eg Trucks, buses, cars, Motorcycles etc.
* Liberialisation → ↑competition → ⓘ Growth of Industry.
* Foreign direct Investment brought in new technology and aligned the industry with global developments.

→ The industry is located around Delhi, Gurgaon, mumbai, pune, chennai etc.

IT and Electronics Industry

* wide range of product calculator to computer.
* Banglore → Electronic capital of India → why → Concentration of Industries
* other centre are Mumbai, Delhi, Hydrabad, pune, chennai etc.
* 18 Software technology park → Single window service and High data communication facility
* This sector is growing due to Business Processing outsourcing [BPOs]

Industrial pollution and Environmental

→ Industries contribute a lot in development but in term it has caused pollution and Environmental Degradation.

Air pollution

Caused by the presence of High proportion of undesirable gases such as Sulphur dioxide and carbon monoxide.

Particulate matter → In the form of dust, Spray, Mist → by chemical and paper factories Burning fossil fuels, Bricks, Refineries and Smelting etc.

Ignore pollution norms → leads to pollution and Hazard to Human Health, animal and atmosphere.

Water pollution

* Caused by organic and inorganic industrial waste and effluents.
* Main Culprits → Paper, pulp, chemical, textile and dyeing, petroleum refineries tanneries and electroplating. Industries.
* These industries dump substances like dyes, detergents, acid, salts and heavy metals like lead and Mercury, Pesticides and fertilizers Plastic and rubber.
* fly-ash - phospo-gypsum and iron and steel slags are the major solid waste in India.

Thermal pollution

*When hot water from factories and thermal plants is drained into river and pond it causes water pollution.
* waste dump is highly toxic. eg Nuclear power plant leads to concerns birth defects and Miscarriages. It harms the aquatic life.

Noise pollution

→ caused due to industrial and construction activities.
→ Machinery, factory equipment, generator, saws and pneumatic and electric drills.
→ It results in irritations and anger, it can also cause hearing impairment, Increased heart rate and blood pressure, lack of concentration.

Control of Environmental Degradation

* 1 litre of waste water pollutes 8 times the quantity of fresh water

Some suggestions

* Minimising use of water for processing by reusing and recycling it.
* Rain water harvesting to meet our requirement.
* Treating hot water and effluents before releasing them into water bodies
* Industrial effluents can be treated in three ways.
  - → Mechanical Means.
  - → Biological Means.
  - → Physical Process.
* Using of ground water reserves by Industries, should be regulated legally.
* PM in air can be reduced by following methods
  - → fitting smoke stacks in factories with
    - (a) Electrostatic Precipitators.
    - (b) Fabric filters.
    - (c) Scrubbers
    - (d) Inertial Separators.
* Using oil or gas instead of coal in factories.
* Generators should be fitted with silencer.
* Noise absorbing material may be used apart from personnal use earplugs and ear phones.

Sustainable development requires Integration of Economic development with Environmental concerns

NTPC shows the way

* National thermal power corporation has Iso certification for Environmental Management System
* NTPC has taken Pro-active for preserving the natural Environment and Resources

Steps taken

(a) Adopting latest techniques and upgrading existing equipment

(b) Providing green belts for nurturing ecological balance

(c) Minimising waste generation by maximising as utilisation.

(d) Ecological monitoring, reviews and online database management for all its power station.