

Ch.1. "Manufacturing Industries" 😊

"Manufacturing"

- ⇒ Production of goods in large quantities by processing raw materials to more valuable products is called manufacturing.
- ⇒ Manufacturing industries fall in the secondary sector.
- ⇒ People employed in the secondary activities manufacture the primary materials into finished goods.

"Importance of Manufacturing"

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- ⇒ Manufacturing industries help in modernising agriculture which forms the backbone of our economy.
- ⇒ It also reduces the heavy dependence of people on agricultural income by providing them jobs in secondary & tertiary sectors.
- ⇒ Industrial development helps in removal of unemployment and poverty.
- ⇒ It also aims at bringing down regional differences by establishing industries in backward areas.
- ⇒ Export of manufactured goods expands trade & commerce.

"Agriculture & Industries"

Agriculture & industries move hand in hand.

On one hand many industries like sugar, textile, etc depend on agricultural products like, cotton is a raw material in cotton

textile mills. On the other hand, many industrial products like fertilisers, PVC pipes, tractors, irrigation pumps, tools help in increasing agricultural productivity. (a2)

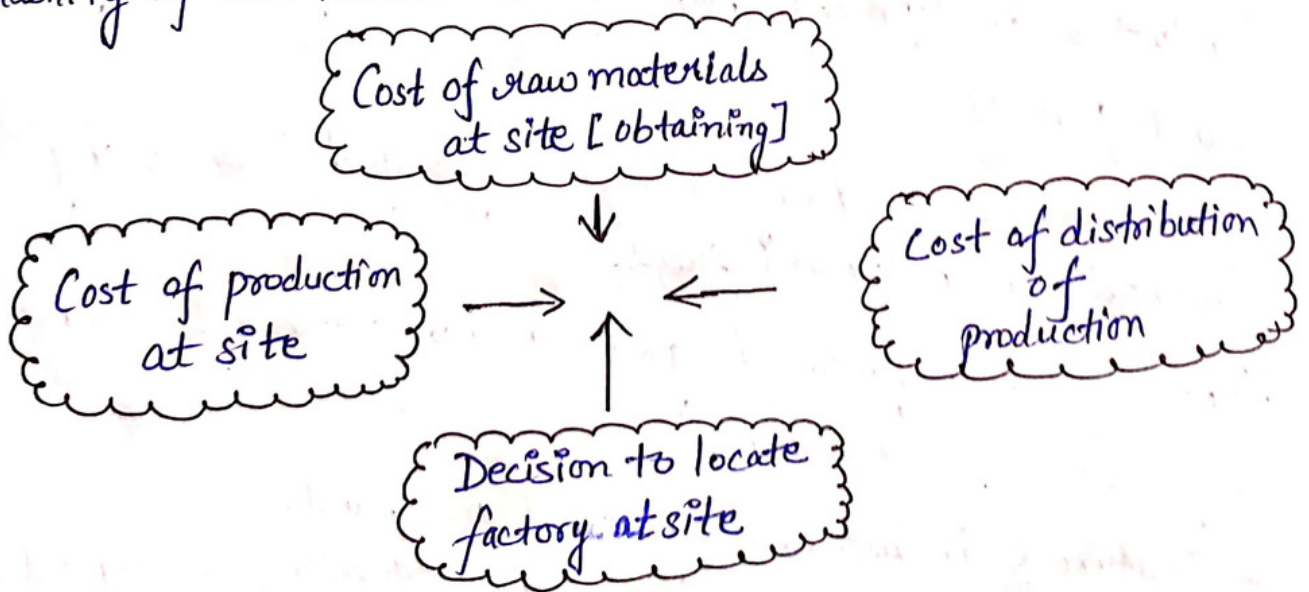
"Contribution of industry to National Economy"

- ⇒ During the last 20 years, the share of the manufacturing sector has stayed at 17% of GDP.
- ⇒ This is much lower than some East Asian economies, where it is 25-35%. The desired growth rate over the next decade is 12% which has been around only 7% in the last decade.
- ⇒ To develop the sector of manufacturing industries, government has set-up the National Manufacturing Competitiveness Council (NMCC).

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① Industrial location

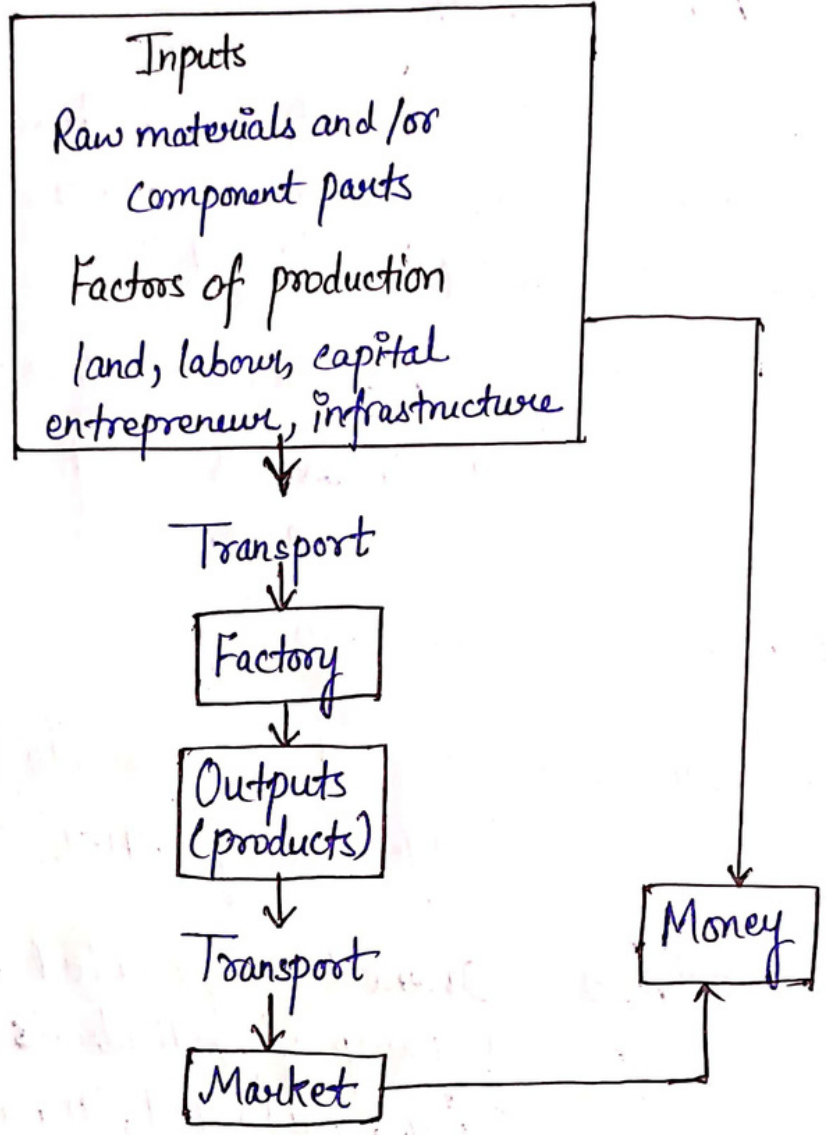
The location of a factory is influenced by Government policies, availability of raw material, labour, capital, power & market facilities.



Ideal location of an industry

② Industry-Market-linkage

Industry are also located around the place where markets are available.



④ Classification of Industries

Industries are classified on the Basis of the following criteria-

① On the basis of Raw Materials used -

- Agro-based Industries ⇒ Cotton, woollen, jute, silk, textile, rubber, sugar, tea, coffee & edible oil.
- Mineral-based Industries ⇒ Iron & steel, cement, aluminium, machine tools, petrochemicals.

② "On the basis of Role Played by them"

- Basic or key Industries → Industries which supply their products as raw materials to other industries. e.g. iron & steel, copper smelting, Aluminium Smelting.
- Consumer Industries → Industries which produce goods for direct consumer use. e.g. sugar, paper, toothpaste, etc.

③ "On the basis of Capital Investment"

- Small-scale industry → Industries with investment upto 1 crore.
- Large-scale industry → Industries with investment above 1 crore.

④ "On the basis of Ownership"

- Public Sector → Owned & operated by government agencies. e.g. BHEL, SAIL, etc.

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- Private Sector → Owned & operated by individuals or a group of individuals. e.g. TISCO, BAJAJ Auto Ltd, Dabur Industries.
- Joint Sector venture → Jointly run by the state & individuals or a group of individuals e.g. Oil India Ltd.
- Cooperative Sector → Owned & operated by the producers or suppliers of raw materials, workers or both. They pool in the resources & share the profits or losses proportionately such as the sugar industry in Maharashtra, the coir industry in Kerala.

⑤ "On the basis of the Bulk & weight of raw material & finished goods"

- Heavy industries ⇒ Industries in which large machines & heavy or bulky raw materials are used to produce products which are heavy or bulky, including capital goods like automobiles and construction machinery.
- Light industries ⇒ Industries that produce light utility goods. e.g. Electrical industry, toy industry.

④ "Types of Industries on the basis of Material Used"

⇒ They are agro-based & mineral based industries.

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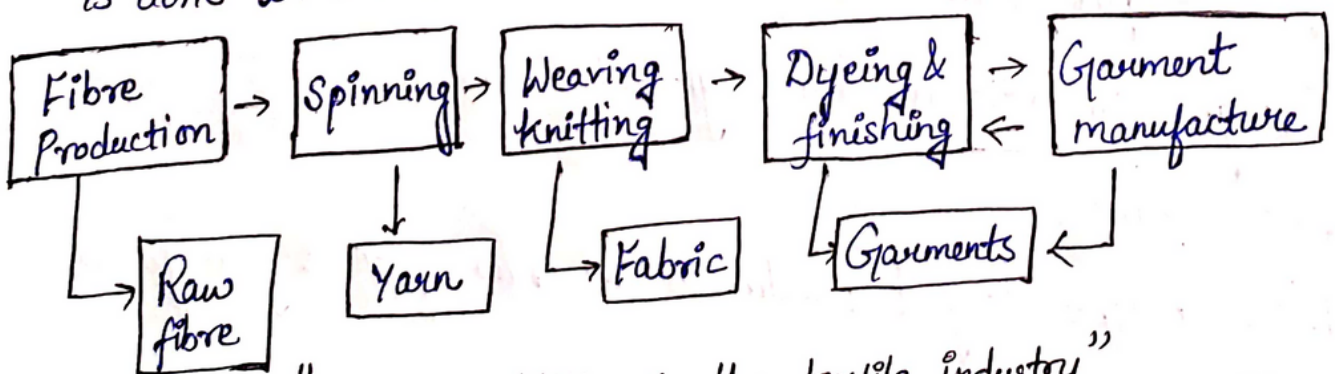
① "Agro-Based industries"

⇒ Industry that are based on agricultural raw materials belong to this category. e.g. cotton, jute, silk, etc.

① ⇒ Textile Industry

⇒ This industry contributes 14% to industrial production.

⇒ It is the only industry in the country that is self-reliant & complete in the value chain, i.e. from raw material to the highest value added products everything is done in India.



"Value addition in the textile industry"

② Cotton textiles

- ⇒ 1st cotton textile mill was set up in Mumbai in 1854.
- ⇒ Cotton textile is mainly located in Maharashtra & Gujarat because
 - Availability of raw cotton as black cotton soil is present.
 - Good transport facilities including port facilities.
 - Availability of labour
 - Good moist climate.
- ⇒ Main exports : Japan, U.S.A, U.K., France, etc.
- ⇒ Cotton textiles is produced by 3 methods in India: a) Handloom, b) Power-looms (c) Mills.
- ⇒ It involves ginning, spinning, tailoring, packing to produce readymade garments.

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Challenges to cotton textile industry.

- ⇒ Scarcity of good quality cotton.
- ⇒ Main cotton growing area went to Pakistan during division.
- ⇒ Old machinery.
- ⇒ Erratic power supply.
- ⇒ Low output from labour.
- ⇒ Tough competition from synthetic fibres.

③ Jute Textiles

- ⇒ India is the largest producer of raw jute & jute goods.

- 1st jute mill was setup in Rishra [Kolkata] in 1859.
- It is used in making rop, bags, carpets, etc.
- Most of the Jute mills are located along Hugli River in West Bengal because-
 - ① Raw jute is available for West Bengal.
 - ② Inexpensive water transport.
 - ③ A good network of railways, roadways & waterways to facilitate movement of raw material to the mills
 - ④ Abundant water for processing raw jute
 - ⑤ Cheap labour from West Bengal & adjoining states of Bihar, Orissa & Uttar Pradesh
 - ⑥ Kolkata is a large urban centre which provides banking, insurance & port facilities for export of jute goods from Hooghly.

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Challenges faced by jute industry

- Stiff competition in the international market from synthetic substitutes & from other competitors like Bangladesh, Brazil, etc

Solution

- In 2005, NTP (National Jute Policy) was formulated with the objective of increasing productivity, improving quality, ensuring good prices to the Jute farmers & enhancing the yield per hectare.

① Sugar Industry

- India stands 2nd as a world producer of sugar
- India occupies the 1st place in the production of gur & khandsari.

- ⇒ Raw material used in this industry is bulky.
- ⇒ It is the 2nd largest agro-based industry after cotton.
- ⇒ Sugar mills are located in Uttar Pradesh, Bihar, Tamil Nadu, etc.
- ⇒ Most of the mills are near the sugar cultivated areas.

Major challenges

- ⇒ Include the seasonal nature of the industry.
- ⇒ Old & inefficient methods of production.
- ⇒ Transport delay in reaching cane to factories.
- ⇒ Need to maximise the use of baggase

② Mineral Based Industries

- ⇒ Industries that use minerals & metals as raw materials are called mineral based industries.

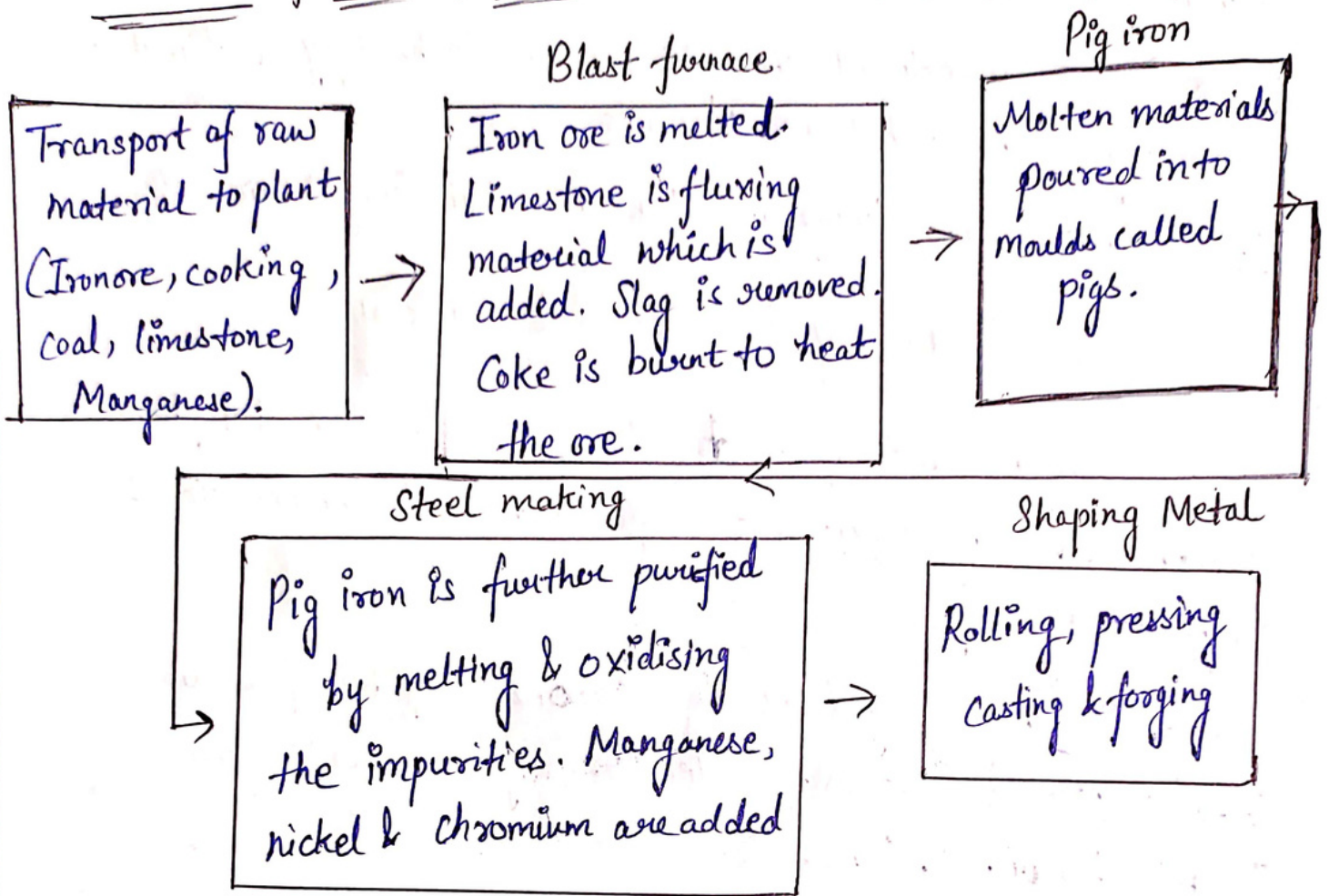
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① Iron & Steel Industry

- ⇒ It is a basic industry & forms the backbone of industrial development in any country.
- ⇒ It provides raw materials for making electrical machinery, railway tracks, dams, etc.
- ⇒ It is a public sector industry. It is concentrated close to mineral rich areas of Chota Nagpur Plateau region in West Bengal, Jharkhand, Odisha & in Karnataka, Tamil Nadu
- ⇒ Some factors are responsible for location of Iron & steel industry. These are -
 - ① Close proximity to the areas where raw materials are found to reduce the transportation cost.
 - ② Availability of cheap labour.
 - ③ Regular supply of water & power.

Processes of Manufacture of Steel

(9)



Challenges for Iron & Steel Industry

India is not able to perform to its full potential in this industry due to -

- ① Limited availability & high cost of coking coal.
- ② Poor infrastructure
- ③ Low labour productivity.
- ④ Irregular supply of energy.

② Automobile Industry

→ Automobiles provide vehicle for quick transport of goods and services and passengers.

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- Trucks, buses, cars, motor cycles & other vehicles are manufactured in India at various centres.
 - Foreign Direct Investment brought in new technology & aligned the industry with global developments.
 - It is located in Guwahati, Pune, Mumbai, Bengaluru, Delhi, etc.

③ "Information Technology & Electrical Industry"

- It covers products from transistors sets to TV, telephones, cellphones & other equipment required by telecommunication & computer industry.

- Bangalore has emerged as the electronic capital of India. Other important centres for electronic goods are Mumbai, Delhi, Hyderabad, Pune, etc.

④ Software Technology

- At present, there are 46 software technology or more than it.
- Fast growing BPO (Business Process Outsourcing) sector is a major foreign Industries exchange earner for ~~the~~ country.
- Important IT centres are Bangalore, Noida, Mumbai, Chennai Hyderabad & Pune.

"Industrial pollution & environmental degradation"

- Industries have contributed significantly to India's economic growth & development. Their waste products contain air-borne particular matter. Basically Industries are responsible for four types of pollution. i.e. air, water, land & noise.

① Air pollution

- It is caused by the presence of high proportion of Sulphur dioxide & carbon monoxide in the air.
- It is emitted by chemical & paper factories, brick kilns, smelting plants & burning of fossil fuels in big & small factories
- It causes respiratory problems.

② Water pollution

- It is caused by organic & inorganic untreated industrial wastes are discharged into rivers.
- Dyeing, petroleum refineries, tanneries & electroplating industries are the main industries causing water pollution.
- It threatens plant, aquatic & human life.

③ Thermal pollution

- This occurs when hot water from factories & thermal plants is drained into rivers & ponds before cooling.
- Wastes from nuclear power plants, nuclear & weapon production facilities cause cancer, birth defects & miscarriages.

④ Noise pollution

- Noise from industrial & construction activities, machinery, from equipment, etc. contribute to noise pollution.

→ This type of pollution results in hearing impairment, increased heart rate, blood pressure & physiological effects. (12)

"Control of Environmental degradation"

- Minimising water usage by reusing & recycling waste water in two or more successive stages.
- Rainwater harvesting to meet water requirements.
- Treating hot water & industrial wastes before releasing them in rivers & ponds.

→ This can be done in 3 phases -

- ① Primary treatment by mechanical means (i.e., screening, grinding, flocculation & sedimentation).
- ② Secondary treatment by biological processes. Such as planting trees, rain water harvesting.
- ③ Tertiary treatment by chemical, physical & biological processes like recycling of waste water.

Some general points to minimise environmental pollution are -

- ① Overdrawing of groundwater reserves by industries needs to be regulated legally.
- ② Generators & other machineries should be fitted with silencers to reduce their sound.

(3) Particulate matter in the air can be reduced by fitting smoke stacks to factories with electrostatic precipitators, fabric filters, scrubbers & inertial separators. (13)

" NTPC "

- It is a major power providing corporation in India.
- It has ISO certification for EMS [Environment Management System] 14001.
- The corporation has a proactive approach for preserving the natural environment & resources like water, gas, oil & fuels in places where it is setting up power plants.
- This has been possible through -
 - ① Optimum utilisation of equipment adopting latest technologies & techniques & upgrading existing equipment.
 - ② Reducing environmental pollution through ash pond management, ash water recycling system & liquid (water) waste management.
 - ③ Providing green belts for nurturing ecological balance and addressing the question of special purpose vehicles for afforestation.

④ Minimising waste generation by maximising ash utilisation.

⑤ Ecological monitoring, reviews & on-line database management for all its power stations.

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