Indian Industries: Iron and Steel

Dr Upma Chaturvedi, Dr Barkha Bhalla, Dr Amina Hasan
Department Of Geography
Avadh Girls' Degree College

Content:

- Iron and steel industry.
- Major iron and steel plants.
- Mini steel plants.
- The problems of iron and steel industries.

Introduction

Iron and Steel industry is the key element in the heavy industrial structure of a nation. It is often called the **basic industry** and forms the backbone of the industrial economy as most of the important industries such as automobile, locomotives, rail tracks, shipbuilding, machine and tools and manufacture of defence equipment etc., depend on iron and steel industry. The production and consumption of iron and steel is one of the most significant measures of the level of industrialization and economic growth of a country.

Core features of iron and steel industry

- It is one of the great importance among the basic and key industries of India.
- These industries are essential for the economic and social development of the country and also very crucial for its defense.
- Consumption of iron and steel is an index of industrial development of a country.
- It supplies the basic raw material for large number of subsidiary industries such as engineering, automobiles, locomotives, machine tools , ship building and many other similar industries.

Requirements of the industry

- Iron ore.
- Coking coal
- Capital
- Market
- Developed means of transport.
- Favorable government policy regarding export and import

Location of industry

The iron and steel industry is generally described as material oriented industry. The raw material used in the making of steel are iron ore, coal, dolomite, manganese and water. All these materials are weight losing and impure. Therefore, the general tendency is to locate the industry at the source of raw material because the cost of transporting raw material far exceeds the cost of transporting the finished products.

DIFFERENCE BETWEEN AN INTEGRATED STEEL PLANT AND A MINI STEEL PLANT

An ***integrated steel plant*** is one where all the three processes from melting of iron ore in the blast furnace to steel making followed by shaping of the metal by rolling is carried out in one complex.
Mini steel plants are decentralized secondary units. They use electric arc and induction furnaces for processing.

- They use scrap iron and sponge iron which are easily available.
- They produce alloy steel and stainless steel.
- They also produce liquid steel which is turned into ingots.
- Mostly mini steel plants are located in the areas away from integrated plants to meet the local demand.
- There are 173 mini steel plants in the country and they are widely spread.

Integrated Steel Plant	Mini Steel Plant
(*a*) These are larger steel plants. (*b*) These plants use basic raw material for making steel. (*c*) These plants use blast furnaces. (*d*) They are usually concentrated near the sources of raw materials and market and also cater domestic and international demands.	(*a*) These are smaller steel plants. (*b*) These plants use steel scrap and sponge iron for making steel. (*c*) Mini steel plants have electric and induction furnaces. (*d*) They are decentralised secondary units scattered across the country to meet local demands.

Advantages of Mini Steel Plants

The Government of India is planning to set up some more mini-steel plants because they have several advantages:

- They use scrap iron which is easily available in the country and is comparatively cheap.
- They do not use heavy capital investment.
- They do not cause pollution.
- They produce special steel.
- They can be set up at any convenient place as they do not need huge infrastructure.

Disadvantages of Mini Steel Plants

- They are totally dependent on electric power.
- They consume more power per unit weight of steel produced than the integrated steel plant.

Some of the mini steel plants are located at Kanpur, Jaipur, Pune, Hyderabad, Ranchi, Delhi and Bhopal.

LARGE INTEGRATED IRON AND STEEL PLANTS IN INDIA

The major iron and steel plants in India are as follows:

- ***TATA IRON AND STEEL COMPANY***
    - It is located at Tatanagar near Jamshedpur in Jharkhand.

- It obtains supply of water from Kharkai and Subarnarekha rivers.
- Cheap hydroelectric power is supplied by Damodar Valley Project.
- Iron ore is obtained from Singhbhum (Jharkhand) and Mayurbhanj (Odisha).
- Coal is obtained from Jharia.
- Limestone and Dolomite from Sundargarh.
- Manganese from Noamundi (Odisha).
- It is also connected with the Kolkata port for exporting of finished steel.
- Skilled and unskilled labour is obtained from West Bengal, Bihar, Uttar Pradesh etc.
- Jamshedpur is well connected by road and railways to major consuming areas.

- ***ROURKELA STEEL PLANT***

- The Rourkela Steel Plant was set up with the help of German firm. (Krupps and Deemag)
- Iron ore – Bonaigarh, Mayurbhanj.
- Coal – Jharia, Raniganj.
- Limestone, Dolomite – Birmitrapur.
- Manganese – Noamundi.
- Hydroelectric power is obtained from Hirakud Power Project.
- Loctaed on the main Mumbai-Kolkata south-east railway line, it helps in transportation.
- It specializes in the production of heavy steel plates for ships, locomotives and helps in the manufacture of fertilizers and chemicals.
- Water- Mandira dam across the Sankha river and also from Mahanadi.

- **INDIAN IRON AND STEEL COMPANY IISCO**

- IISCO has developed its work on the Damodar valley coalfields of Raniganj.
- Iron ore—Singhbhum
- Coal –Raniganj
- Limestone and dolomite –Rourkhela and Bisra
- Manganese –Gangpur Orissa
- Water—Damodar river.

- **BHADRAVATI**

- Visveswariya Iron And Steel Ltd VISL is the only steel plant lying outside the great mineral belt of India
- Iron ore—Kemmangudi
- Limestone and dolomite –Bhandiguda
- Manganese –Shimonga ,Chitaldurg
- Water—Jog falls

- **BHILAI**
  - This plant, developed under government initiative with the collaboration of the Soviet Union in Durg district of Madhya Pradesh.
  - Iron ore—Dalli –Rajhara hills of Durg district
  - Coal-- Korba and Jharia
  - Limestone and dolomite –Raiput and Bilaspur
  - Manganese –Balaghat

- Water—Tandula tank

- **DURGAPUR**

- This plant, developed under government initiative with the collaboration of the British Government near Raniganj Coalfiled In West Bengal
  - Iron ore—Raniganj
  - Coal—Buru and Gua ,Singhbhum
  - Limestone and dolomite –Rourkhela ,Birsa
  - Manganese Gangpur
- Water—river Damodar

PROBLEMS OF IRON AND STEEL INDUSTRY

- **Huge investment:** This is a large-scale industry that requires huge capital for its set up. It is difficult for a developing country like India to invest huge capital required in this type of industry.

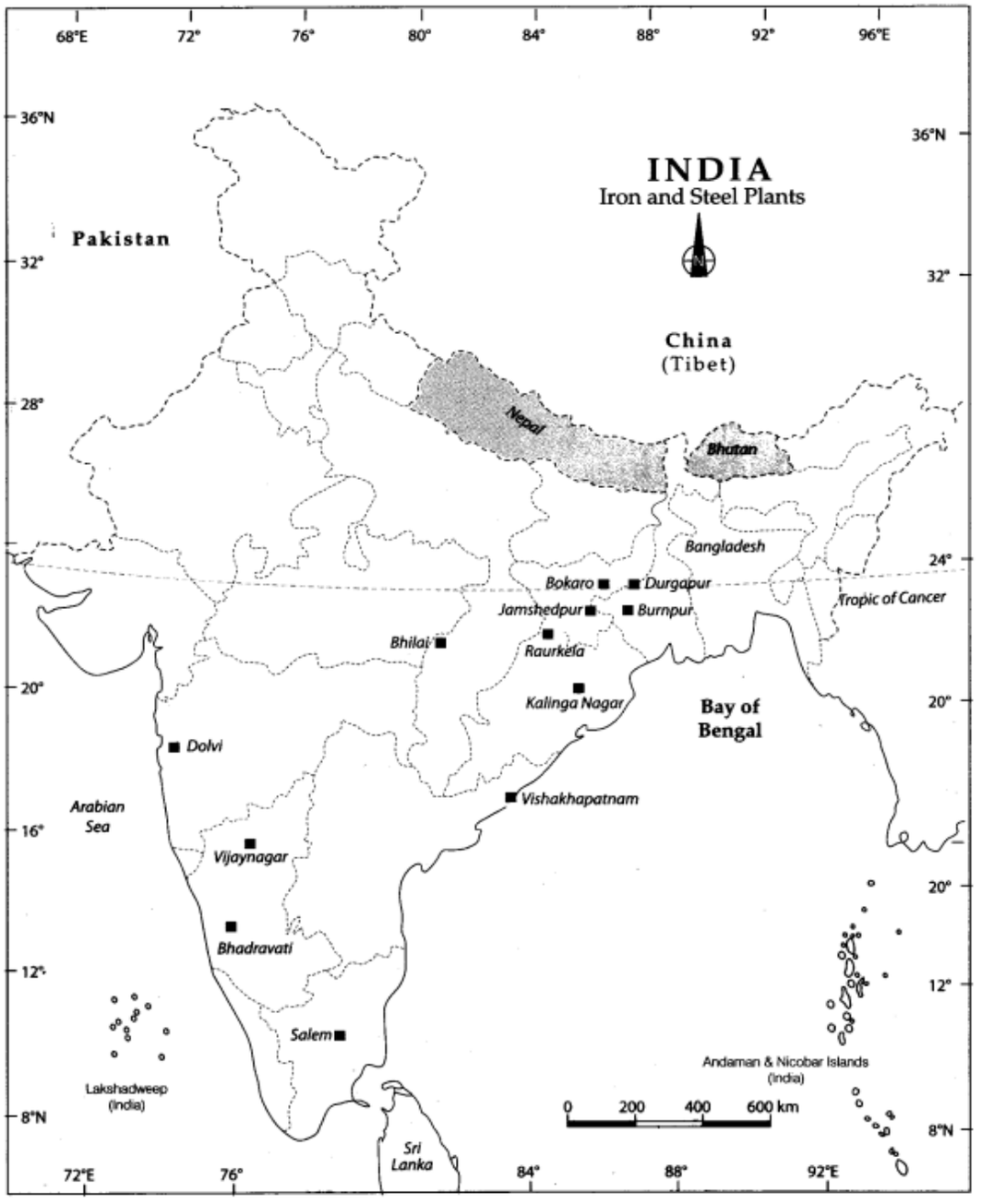
- **Outdated and Low Technical Development:** Outdated machinery has increased the cost of production of iron and steel. This has also reduced the profit margin of the iron and steel plants.

- **Inefficiency in Production:** The production units do not utilize the full potential of employees. Labour productivity is low as compared to other countries which increases the cost of production.

- **Rise in Import:** India has to import iron and steel from foreign countries as it is not able to fulfill its demand for steel. The rise in import leads to greater spending of foreign exchange.

- **Proper Availability of Resources:** There should be proper availability of all the natural resources at one place such as iron-ore mines, energy sources and water resources. If even one of the natural resources is not available, then the development of the industry becomes very difficult.

- **Inadequate raw material:** Quality of coal and iron is another major issue in the production of good quality steel.



Source NCERT geography