



FACTORS AFFECTING THE EMERGENCE AND DEVELOPMENT OF IRON AND STEEL INDUSTRY IN COLONIAL INDIA: A HISTORICAL OVERVIEW

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ABSTRACT

The present article wishes to examine the factors which had affected the emergence and development of iron and steel industry in colonial India. Several crucial factors such as availability of raw materials—iron ores, coal, limestone, dolomite and manganese—in several parts of India, advantage of geographical location, availability of water from rivers had enabled the establishment of the iron and steel industry in India during the colonial period. Thus, India's major iron and steel producing companies, i.e., the Bengal Iron Company, TISCO, IISCO and the Mysore Iron and Steel Works were established during the colonial period. The article also deals with the labour force, capital and market as these are the important factors behind the growth of iron and steel industry. In this article, it has been shown that how these important factors had worked for the emergence and development of iron and steel industry in India during the colonial period.

KEY-WORDS- Geographical location, raw materials, iron and steel industry, labour, TISCO, IISCO, Bengal Iron Company, Mysore Iron Works.

1. INTRODUCTION

Iron and steel industry is one of the most important large-scale industries in India. During the colonial period, the discovery of high grade iron ore, coal and other necessary mineral resources in several parts of India (especially in the eastern zones) laid the foundation of the establishment of modern iron and steel industry. Several crucial factors had worked behind the emergence and development of the iron and steel industry in colonial India. During the late 18th and early 19th centuries, British East India Company's commercial exploitation of mineral resources made availability of iron ore, coal and other important mineral resources in India and specially in the eastern zones of India. As the eastern and central zones of British India had rich deposits of essential raw materials i.e., iron ore, coal, limestone, dolomite and manganese, therefore, science and technology was used in these regions to establish modern iron and steel industry. Several other important factors such as availability of land, water, advantage of geographical location, labour (skilled and unskilled), foreign and indigenous capital and easy access of markets had enabled the emergence and development of the iron and steel industry in colonial India. Thus, India's four main iron and steel producing companies, i.e., the Bengal Iron Company, the Tata Iron and Steel Company (TISCO), the Indian Iron and Steel Company (IISCO) and the Mysore Iron and Steel Works (MISW) were established during the colonial period.¹ Thus, the first modern iron works in India was established at Kulti under the name of the 'Bengal Iron Works Company' in 1870² and began to produce pig iron in 1877.³ TISCO was

established at Jamshedpur (formerly Sakchi) in 1907⁴ and in the post-war (First World War) phase, IISCO was established at Burnpur in 1918⁵ and the Mysore Iron Works was established at Bhadravati. Both, IISCO and the Mysore Iron Works began their operation in 1923.⁶

In this article, I have highlighted both the ecological factors and infrastructural facilities such as geographical location, availability of raw materials, adequacy of water, labour, capital and market connected to the emergence and development of the iron and steel industry in colonial India.

2. GEOGRAPHICAL LOCATION

Geographical location is very crucial for an industry like iron and steel. During the colonial period, the main iron and steel producing companies i.e., Bengal Iron Company, TISCO, IISCO were situated in the eastern parts of India. The reason is very clear, as the eastern zones of British India had rich deposits of raw materials such as iron ore, coal, limestone, dolomite and manganese, therefore, these companies were set up to utilize the essential raw materials. But on the other hand, we have instance of the Mysore Iron and Steel Works which was established in south India. So, it is necessary to know the geographical advantages of India's iron and steel industry in the colonial period.

Starting with the Bengal Iron Company of Kulti-Barakar. Kulti is a town under the Asansol Sub-division of Paschim Bardhaman district of West Bengal. The works at Kulti was situated at a distance of about 214 kilometres from Howrah on the grand chord line of the East Indian Railway (EIR). Moreover, the plant was advantageously situated to utilize Raniganj coal and the clay-ironstone and flux available in the coal field within a few miles of the works.⁷ The plant of the Tata Iron and Steel Company (TISCO) is situated at Jamshedpur (formerly Sakchi), about two miles from Tatanagar station, which is about 160 miles west of Kolkata, and at that time it was connected with the Bengal-Nagpur Railway. TISCO was situated excellently from the point of view of access to raw materials. The essential raw materials i.e., iron ore, coal, limestone and dolomite were available within a radius of 100 miles from the plant. The Indian Iron and Steel Company (IISCO) is situated at Burnpur⁸, adjacent to Asansol, which is some 138 miles north-west of Calcutta and at that time it was connected to the main line of the East Indian Railway (EIR) and with the Bengal-Nagpur Railway by broad-gauge sidings. The Mysore Iron Works was owned by the Government of Mysore. The plant was situated at Bhadravati, in Mysore State, south India. It may be noted that all four iron and steel producing units were advantageously situated to utilize sufficient water from the rivers. For Bengal Iron Company, water was obtained from the River Barakar, for IISCO, water was obtained from Damodar River,⁹ for TISCO, water was obtained from the Subarnarekha River,¹⁰ and for the Mysore, the water was obtained from the Tungabhadra River.¹¹ So, all these iron and steel works were benefited by their geographical location to access adequate water and land.

3. AVAILABILITY OF RAW MATERIALS

Raw materials are the backbone of any industry. In the context of the iron and steel industry, it may be said that, the modern Indian iron and steel industry occupies an important position—both economically and geographically—with respect to its supplies of raw materials. The iron and steel industry of India is based entirely on indigenous raw materials, of which the chief are iron ore, coal, limestone, dolomite, manganese etc.

Iron ore: Iron ore is the main raw materials of the iron and steel industry. During the colonial period especially in the early 20th century, deposits of iron ore of high quality were found in several parts of India, notably in Bihar and Orissa, Mysore, Madras etc.¹² Bihar and Orissa together had formed 'Iron Belt'. As Richard Mather had stated (1927)-

The only other deposits which are being worked for iron manufacture are those of the "Iron Belt" in the Province of Bihar and Orissa. The parts of this belt which are at present being worked lie in an area about 20 to 50 miles south of the main line of the Bengal Nagpur Railway from Calcutta to Nagpur and about 120 to 200 miles west of Calcutta. The deposits are partly in the Singhbhum District and partly in the Feudatory States of Mayurbhanj, Bonai and Keonjhar.¹³

The important deposits of iron ore was the Bihar-Orissa belt occurring in the Mayurbhanj State, south Singhbhum, Keonjhar and Bonai.¹⁴ So, it cannot be denied that India had rich deposits of iron ores during the colonial period. India's iron and steel producing companies had obtained iron ore from these deposits. During the early 20th century, the Bengal Iron Company obtained iron ore mainly from Chiria-Manoharpur (present Jharkhand) region. Apart from that, iron ore was available at a number of places surrounding the iron works but the quality was inferior. Iron ore was also available at Kalimati (Singbhum). For TISCO, Iron ore was brought from the deposits of Mayurbhanj, south of Jamshedpur, and from Noamundi in Singbhum, which was nearly 80 miles south-west of Jamshedpur.¹⁵ TISCO also had owned iron mines at Gurumasini and elsewhere in India.¹⁶ It may be noted that half of the iron ore for TISCO had come from Mayurbhanj.¹⁷ It may also be noted that, before the establishment of TISCO, an inspection for finding mineral resources in these areas was already done. Through the efforts of Jamshetji Tata, an Indian industrialist, and P. N. Bose of the Geological Survey of India, a suitable mineral base was found by 1904.¹⁸ For IISCO, most of the raw materials had come mainly from Bihar (at that time Jharkhand was included within Bihar) and Orissa. The Company's iron ore mines were situated at Chiria-Manoharpur and Gua.¹⁹ Mysore Iron Works had a modern charcoal blast furnace and the iron ore was obtained from the Bababudan Hills.²⁰ Ore was taken from open quarries to the foot of the hills by gravitational ropeways and thence 25 miles by tramway to the blast furnace.²¹

Coal: Another important raw materials is coal. The main fuel requirement of the iron and steel industry is coking coal. During the colonial period, coal was almost entirely obtained from the Jharia coal field in Bihar and Orissa and from the Raniganj coalfield. For the Bengal Iron Company, coal was obtained both from the Raniganj and Jheria field. TISCO had owned nine large coal mines, four of which were located on the Jharia field.²² The coalfields were situated north of the works, the distance by rail averaging about 115 miles.²³ Like the Bengal Iron Company, IISCO also had owned coal mines in the Jheria and Raniganj coalfield. The Company's (IISCO) coal mines were situated in Noonodih (Jheria field), Chasnalla, Jitpur and Ramnagore (Raniganj field).²⁴ In the case of the Mysore Iron Works, as there were large forests in Mysore, but no coal, therefore, the blast furnace at the Mysore Iron Works had used charcoal instead of coke.²⁵

Limestone, Dolomite, Manganese : Limestone, dolomite and manganese are equally important for the blast furnaces. Limestone is required for use as a flux in blast furnaces and in basic steel-making ; dolomite can also be used as a blast-furnace flux and is required as a lining for basic steel furnaces.²⁶ India has rich deposits of these important raw materials. During the early years of the Kulti Works (Bengal Iron Company), limestone was brought from Raghunathpur, a few miles away from the works. TISCO had owned limestone quarries at Panposh in the Gangpur State and at Khansbahal and magnesite deposits in the Mysore State.²⁷ Later on, TISCO had bought limestone from Katni.²⁸ For IISCO, the Bisra Stone and Lime Company (BSLC) had supplied limestone and dolomite on the basis of standing orders from IISCO.²⁹ For the Mysore Iron Works, manganese and limestone were available within a radius of 27 miles at points accessible by railways.³⁰

4. LABOUR

Labour force is one of the most important human resources in a large-scale industry like iron and steel. Apart from the mineral resources (iron ore, coal, limestone, dolomite, manganese etc.), labour force can also be considered as the back bone of iron and steel industry. Labourers had played a vital role in the development of the iron and steel industry in India during the British colonial rule. Both skilled labour and unskilled labour (including male, female and child labour) were available in Indian iron and steel industry. Moreover, contract labour was also available. Though unskilled labour was available cheaply in plenty in and around the work place, but skilled labour had to be brought from Calcutta, Bombay or Cawnpore, at prohibitive wages. Even the European skilled labour was available at the works. But the problem was, they (European skilled labour) were quite expensive than their Indian counterpart. But, European skilled labour had to be employed compulsorily, because the technique of making iron by modern methods was unavailable indigenously. For instance, TISCO had employed a large number of European skilled labour. Until

the outbreak of the First World War in 1914, the Open Hearth Furnaces of TISCO were worked by German labour but after the outbreak of the war their places were taken by men recruited in England.³¹ So, it can be easily understood that, Indian iron and steel industry was developed with the accessibility of both skilled and unskilled labour.

5. CAPITAL AND MARKET

Capital for the investment in the industry and market for the finished product are the crucial elements for the emergence and development of iron and steel industry. During the colonial period, both foreign and indigenous capital were invested in the Indian iron and steel industry. Foreign capital (mostly British capital) was generally invested through the managing companies (such as Burn and Co., Martin and Co. etc.). Few foreign companies were established in partnership with the Indians. Martin and Co. was one of those companies that was established with the collaboration between Tomas Martin and Sir Rajendra Nath Mookerjee (a Bengali entrepreneur). These managing companies usually used to manage most of the colonial firms. Martin and Co. became the managing agents of the Kulti works in the early 1890s.³² But the first half of the 20th century was the time when indigenous capitalist class was emerged in a significant way. Indigenous entrepreneurs like Jamshetji Tata (1839-1904), Rajendra Nath Mookerjee (1854-1936), Biren Mookerjee (1899-1982)³³ had invested both capital and technical knowledge in iron and steel industry. Indigenous private investment was one of the main reasons behind the establishment of the iron and steel works during the first half of the 20th century. Another important element is the market. Jamshedpur and Asansol are close to Kolkata, the then largest single market for finished steel in India.³⁴ The market of Kolkata and the facilities of the port for iron shipments to abroad had represented an advantage for the Bengal Iron Company, TISCO and IISCO. On the other hand, Mysore Iron Works had good access to the southern regional market.³⁵

6. CONCLUSION

After the discussion, it may be said that several crucial factors such as availability of land (mostly covered with forest and tiny jungles), availability of raw materials—iron ore, coal, limestone, dolomite and manganese—in several parts of India, and advantage of geographical location had enabled the emergence and development of the iron and steel industry in India during the colonial period. In this context, it is necessary to understand the role of rivers. As, IISCO and the Bengal Iron Company obtained sufficient water over the decades from the River Damodar and Barakar respectively; TISCO and the Mysore Iron Works from the River Subarnarekha and Tungabhadra respectively, therefore, it may be said that rivers had also played an important role in the growth of iron and steel industry in colonial India. Apart from that, investment of foreign capital as well as indigenous capital, labour and market had also played a vital role in the development of this industry. Role of science and technology and support of the colonial government to this industry were the important factors regarding the development of this industry during the colonial period. But only TISCO gained some support from the colonial government and during the mid-1920s, tariff protection was granted to TISCO by the Indian Tariff Board (ITB).³⁶ However, India's other major iron producing units i.e., Bengal Iron Company, IISCO and Mysore Iron Works responded positively to the ecological factors and used the infrastructural facilities and were developed in a significant way during the 1920s, and in the mid-1930s, these iron producing units were further modified and converted into steel producing units. Thus, in 1936, steel section was constructed at the Mysore plant and the plant was renamed as the Mysore Iron and Steel Works (MISW).³⁷ Similarly, in 1937, the Steel Corporation of Bengal (SCOB)³⁸ was established at Burnpur by the amalgamation of the Bengal Iron Company and IISCO.³⁹ Thus, during the colonial period, the iron and steel industry was emerged and developed in a significant way and occupied a strong place in Indian economy.

NOTES AND REFERENCES:

¹ Initially, the Bengal Iron Company was known as the 'Bengal Iron Works Company', then it was renamed as the 'Bengal Iron and Steel Company', again it was renamed as the 'Bengal Iron Company'.

² 'KULTI WORKS', an official publication of IISCO, 1961.

³ B. R. Tomlinson, *The Economy of Modern India, 1860-1970*, Cambridge University Press, 1998, p. 128.

⁴ Lovat Fraser, *Iron and Steel in India: A Chapter from the Life of Jamshedji N. Tata*, The Times Press, Bombay, 1919, p. 77.

⁵ 'BURNPUR WORKS', an official publication of IISCO, 1961.

⁶ John. E. Brush, "The Iron and Steel Industry in India", *Geographical Review*, Vol. 42, No. 1, January, 1952, pp. 37-55, (pp. 49-50.).

⁷ *Ibid.*, p. 48.

⁸ Originally the plant is situated at Hirapur. (Hirapur is a small village in Burnpur).

⁹ John. E. Brush, op. cit., p. 49.

¹⁰ *Ibid.*, p. 44.

¹¹ *Ibid.*, p. 51.

¹² Richard Mather, "The Iron and Steel Industry in India", *Journal of the Royal Society of Arts*, Vol. 75, No. 3886, May 13th, 1927, pp. 599-624, (see p. 600.).

¹³ *Ibid.*, p. 601.

¹⁴ E. v, Parkinson, E. V. Parkinson, "The Development of the Iron and Steel Industry in India", *Journal of the Royal Society of Arts*, India, Pakistan and Burma Section, Vol. 98, No. 4824, 30th June 1950, pp. 668-85, (see pp. 668-69).

¹⁵ Richard Mather, op. cit., p. 604.

¹⁶ *Reports of the Indian Industrial Commission, 1916-18*, Superintendent Government Printing, Calcutta, 1918, pp. 20-21.

¹⁷ John. E. Brush, op. cit., p. 44.

¹⁸ *Ibid.*

¹⁹ IISCO, *SAMACHAR, Vol-6, No-1*, 1981, p. 7. (An official publication of IISCO).

²⁰ John. E. Brush, op. cit., p. 51.

²¹ *Ibid.*

²² *Reports of the Indian Industrial Commission, 1916-18*, op. cit., pp. 20-21.

²³ Richard Mather, op. cit., p. 604.

²⁴ N. R. Srinivasan, *History of the Indian Iron and Steel Company*, Public Relations Department of IISCO, Burnpur, 1983, p. 47.

²⁵ Richard Mather, op. cit., p. 602.

²⁶ *Ibid.*

²⁷ *Reports of the Indian Industrial Commission, 1916-18*, op. cit., pp. 20-21.

²⁸ Amiya Kumar Bagchi, *Private Investment in India 1900-1939*, Cambridge University Press, 1972, p. 296.

²⁹ The Bisra Stone Lime Company Limited (BSLC) was incorporated on 1st October, 1910.

³⁰ John. E. brush, op. cit., p. 51.

³¹ Lovat Fraser, op. cit., p. 83.

³² 'KULTI WORKS', op. cit.

³³ Sir Biren Mookerjee (1899-1982) was the son of the famous Bengali entrepreneur Sir Rajendra Nath Mookerjee (1854-1936).

³⁴ John. E. Brush, op. cit., p. 53. (Also see- Amiya Kumar Bagchi, op. cit., p. 296.).

³⁵ *Ibid.*

³⁶Morris D. Morris, "The Growth of Large-Scale Industry to 1947" in Dharma Kumar (ed.), *The Cambridge Economic History of India, Vol. II, 1757- 2003*, Orient BlackSwan impression, 2010, p. 624.

³⁷*Ibid.*, p. 627.

³⁸ Steel Corporation of Bengal (SCOB) was amalgamated with IISCO in 1953.

³⁹'*BURNPUR WORKS*', op. cit.