

Data Analysis and Discussion:

Chapter No. 3.1

Background and Development of Railways in North Bengal:

3. Data Analysis and Discussion:

To test our selected eleven hypotheses, we have selected ten chapters. We have tested the Hypotheses: 5 and 6 in one chapter, in the Chapter No.3.5. Therefore, each and every chapter discussed a specific problem and examined our selected data and sources to achieve specific research objectives.

3.1. Background and Development of Railways in North Bengal:

In this chapter we have tested the Hypothesis: 1 to achieve our first selected objective. The colonial motive behind the foundation of railways in northern Bengal was no longer different from the national context. Yes, we have some benevolent statement or logic by the Colonial authority like Lord Elgin: "The development of the country by the construction of railways... is the method by which we can materially improve the condition of the vast population dependent upon agriculture most surely and most steadily"¹. Practically, the study of the foundation of railway in northern Bengal does not agree with Elgin. Instead of the study eventually supports the view of Nationalist scholars who trace on the interest of English commercial and moneyed classes². In 1853, Dalhousie in his famous Minute put priority in the selection of railway routes based on commercial advantage, and stated that railway routes must be remunerative by absorbing the existing traffic in goods and passengers³. It is significant that the remunerative return was very essential to the colonial authority to encourage the private investors for the further development of railways in India. Dalhousie, in his another Minute dated on 4th July 1850, stated that, "The object of that experiment is to be prove not only that it is practicable to construct the railway in India as engineering works but that such railways when constructed will, as commercial undertaking afford a fair remunerative return on the money which has been expended in their construction, so that the public may thereby be encouraged to invest their capital in the construction of similar work in other parts of India"⁴. The Court of Directors, in their dispatch dated 7th May 1845 to the Government of India mentioned that 'the advantage of railroads is available only where proportionately large returns can be obtained to meet the great expense, first constructing, and then of working them.'⁵ It is remarkable, though the main aim of the colonial authority was same, but the factors were slightly varied according to region and geopolitical conditions. Due to geopolitical condition, northern Bengal was not only important for commercial interest but also for political.

3.1.1. Commercial Interest:

The attraction of the colonial authority towards the Northern Bengal was due to the wide and affluent agricultural production region basically for the enormous quantities of tea, jute, rice, tobacco, wood & silk. It is remarkable; the natural feature of northern Bengal was not too much encouraging for the foundation of the railways. Huge numbers of water

cannel, river, the rough soil conditions with land sliding, mountains and dense forest were real obstacles for railway foundation. Even so, the obstacles were no longer, and faded by the colonial commercial and political interest.

The administrative report of Bengal evidently indicates the stance of the colonial authority as the foundation of railway in Northern Bengal. Reports on the Administration of Bengal indicate that: "Preliminary surveys have been made for a line from a point on the Ganges opposite to one of the principal stations of the Eastern Bengal line through the rich and populous districts of North Bengal line, several of which have a population exceeding 600 per square mile, and, which produce enormous quantities of jute, rice, sugar, tobacco, sugar, silk, and other staples. The line would open up a country of great commercial importance now sealed up for eight months of the year, and most inaccessible to the officers of Government and other travellers at all seasons. It would run up the foot the Himalayas and terminate among the tea gardens of the Terai under the hill stations of Darjeeling and Kurseong. The report of the Engineers is very favorable to the construction of a cheap line, and the whole question has been submitted with a report by this Government to the Government of India and Secretary of State"⁶

The Annual Administrative Report of Bengal 1872-73, reflects the same colonial attitude towards the foundation of railways in Northern Bengal. "The line as there proposed was to have been 211 miles long; it was to cost 6,000 pound a mile throughout; it was to tap the principal jute, rice, and tobacco exporting districts of Northern Bengal; it was to serve the tea- growing country at the foot of the Himalayas; and it was to have been linked to the Eastern Bengal railway by a steam ferry across the Ganges"⁷.

The 'Survey and Settlement Report of the Western Duars, in the District of Jalpaiguri 1889-1895 by D.H.E. Sunder suggested the further extension of the BDR through the eastern and south- easterly direction up to Falakata via Dhupguri through the fertile agricultural land. "If the alignment be along the foot of the hills the line will be of use to planters. Tea gardens alone, instead of the people and country generally, will benefit by it and loss to the Company must ensue. On the other hand, if the line be carried in an easterly or south-easterly direction so as to run through the lands recently resumed from the late Colonel Hedayat Ali's estate, or to pass the important jute marts at Dhupguri and Falakata, the company will not only obtain all the jute, tobacco, mustard seed, and cotton, which goes at present from Falakata tahashil and the adjoining large markets in Koch Bihar by country boats to Dacca, Sirajganj, Calcutta, and other places but also a large passenger traffic. A railway to Dhupguri and Falakata would soon make those places better jute markets than Haldibari or Domer. And if feeder roads be made leading to tea gardens and reserved forest, Government and planters would benefit in every way, and it would not be long before the Duars would be entirely under the plough, have a better climate, and be less inconvenient to live in"⁸. Sunder's suggestion was very important, as the proposal was to flourish the agriculture economy of the Duars region along with the tea industry. However, the authority

not accepted the proposal, and they traced on their own commercial interest. Therefore, the foundation and extension of the BDR mainly followed the interest of tea and timber trade. Where, the agriculture was the secondary prospect to the authority.

According to geopolitical viewpoint, Northern Bengal was also vital for the prospects of trade with Bhutan, Tibet, Burma and Assam. According to Binoy Ghosh, “the fourth projects contemplate the extension of the North Bengal Railway to Dhubri on the Brahmaputra to serve the trade of the Assam Valley⁹”. At the same time, the Government of India, referring to the correspondence which had passed with the Home Government regarding the need of railway or other efficient communication with Assam, expressed the view that any proposal for railways in North-East Bengal would be incomplete that did not “calculate for all extension towards Assam, or at least to the banks of the Berhampooter¹⁰”.

3.1.2. Pressure of Tea Trade:

After the accession and unification Darjeeling and Western Duar’s investor soon realized the versatile prospects of Northern Bengal. Dr. Campbell was a pioneer behind the foundation of tea gardens in Darjeeling. In 1840, Dr Campbell experimentally started tea plantation in Darjeeling¹¹. Within the short time it exposed the wider possibility of expansion due to international demand and tea gardens developed remarkably before the foundation of the railway. The following table illustrates the development of tea gardens before the foundation of railway:

Years	Number of gardens	Acreage under tea	Outrun of tea in lbs.
1866	39	10,000	4,33,300
1870	56	11,000	1,700,000
1874	113	18,888	3,927,911
1885	175	38,499	9,090,298

Source: L.S.S. O’ Malley : Bengal District Gazetteers ,Darjeeling, Op.cit. p.74

From the above illustration, it's clear that after the foundation of tea garden between the years 1866 and 1885, the production of tea increased 21 times within 19 years. Due to huge prosperity, lots of European merchants invested their capital in the tea industries of Darjeeling. Since Dr. Hooker's time, the affluence of Darjeeling has received a further development from the tea industry. The influx of European capital introduced by the planters open out a practically limitless source of wealth¹². It is relevant that in 1881, out of 57 plantations estates only one belonged Indian owner. In 1901, the picture lightly changed, out of 79 owners only seven were Indian¹³. However, soon the authority realized the complicatedness of communication for the development of tea industry. Sluggish moving 'Tanga' was an only vehicle to carry tea and other necessary goods, which could not carry heavy loads. Owing to the dissatisfaction of the traditional slow-moving communication, it was essential to establish a smooth communication system like tramway. The account of the Darjeeling Himalayan Company supports this view. According to it " But the needs of this industry and the inconvenience suffered by the general public in the tedious ascent by Tanga soon led to dissatisfaction with this means of transit, and hastened the laying of a steam tramway along the road from Siliguri to Darjeling"¹⁴. It should be remarkable that after crossing the fifty years since the foundation of tea industry, it was still almost in the hands of European planters¹⁵.

The Jalpaiguri district established on 1st January 1869 and the Western Duars was a major part, which annexed by the British Government after the Bhutan war on November 1864¹⁶. The Western Duars was suitable to the growth of Tea for the condition soil and climate. In 1874, Mr. Richard Houghton opened a tea garden at Gazilduba, and he was the pioneer of the tea industry in the Jalpaiguri District. The government offered land to investors on favorable terms, and the industry developed rapidly before the foundation of Railways (1874 to 1892)¹⁷.

The table below illustrates the rapid development of the Tea industry in Jalpaiguri District before the establishment of the Railway.

Years	Number of gardens	Acreage under tea	Outrun of tea in lbs.
1876	13	818	29,520
1881	55	6,230	1,027,116
1892	182	38,583	18,278,628

Source: Grunning, J.F, *Eastern Bengal and Assam District Gazetteers, Jalpaiguri, 1911.p.135.*

After annexation in 1864, the Government soon wanted to open up the Western Doers' and mostly to develop the tea industry, and they realized the necessity of a rapid communication system like Railways¹⁸. 1876 to 1881, within five years, the number of garden increased four times more and the production of tea increased more than thirty four times. Between 1876 to 1892, within sixteen years, the number of garden increased fourteen times and the production of tea increased nearly hundred times double. The huge development of the tea garden and tea trade in Duars region encouraged the Government to flourish additional tea industry in Jalpaiguri District.

The tea districts of North Bengal were initially served only by the Eastern Bengal State Railway which has extended up to Jalpaiguri in 1878 and a few months later to Siliguri. This was followed by a series of other railway lines, viz, Siliguri-Darjeeling in 1881, Barnes-Damdim in 1889, Daindim- Odlabari-Bagrakot in 1901-02 and Mal- Chalsa-Chengmari-Madarihat in 1901-03. The last was subsequently linked with the East Bengal State Railway through the Cooch-Bihar State Railway. The last to open was the Chalsa-Mateili line in 1918. Interestingly, all these railway lines were geographically so laid that they served exclusively the interests of the plantation estates. The interest of the peasant sector and region as a whole was totally ignored. On the contrary, they were made to contribute towards raising of the profits of the railway lines. For instance, the Jalpaiguri District Board was assigned to contribute an amount not exceeding Rs 4,000 per annum towards raising the net profits of the Bengal- Dooars Railway Undertaking to five per cent per annum on the capital outlay¹⁹.

A large area of the northern part of Bengal came to be subsequently interspersed with the plantation agriculture where growth was simply phenomenal in the wake of huge capital investment. For an example, the number of leases under tea in 1876 was only 13 with an area of 818 acres, which had risen to 235 gardens with 76,403 acres of land under tea by 1901²⁰. In this way, North Bengal was entered into the world capitalist system. The incorporation was a part of the expanded reproduction so essential to the workings of the capitalist mode of production. Faced from the late 19th century with falling profits at home, increased foreign competition and periodically threatened thereafter with collapse in the wake of severe crisis, British capitalism had no real alternative to expansion. Capital was therefore easily forthcoming for investment in tea plantation estates in north-east India²¹.

3.1.3. Timber:

The attraction towards the wealth of natural forest was another factor behind the construction of railways in northern Bengal. The foundation of NBSR which started in 1874, in response to the demand for transporting timber also, that provided the forest department with the much-needed market for forest wood. Soon after the annexation of Duars in 1864 the Conservator of forest suggested the forest of Duars were of little use to the local community and should be made available to the other parts of Bengal for

commercial utilization²². The forest department hoped the timbers of Duars will achieve the vast timber market of Oudh, Nepal and Eastern Bengal that would be also able to accelerate the financial profit²³. This, however, was not right what the forest department had hoped to find. We have separately discussed the colonial interest on forest in the Chapter No.3.8, and how the policy of railway expansion in North Bengal followed the forest resources of the same region. Therefore, we have no need to vast analysis in this context

3.1.4. Political Interest:

Strategically, Northern Bengal was significant for the existence of Sikkim, Bhutan and Tibet to the north, and Nepal to the west. So, it was also important on military and security point of view. Therefore, the authority needed armed base camp to protect the north – eastern boundary of the British Indian Empire. Due to geopolitical situation, Northern Part of North Bengal, mainly Darjeeling and Duars region were highly important to the colonial authority. Dalhousi emphasized the consolidation of the eastern frontier of India. It mentioned in his famous minute dated on 20th April 1853. After the conquest of Pegu or the Lower Barma, the question of military defense of the eastern frontier was very essential to the colonial authority for the easy transport of troops²⁴.

The Annual Report on the Administration of the Bengal Presidency for 1860-61 laid down in clear terms the policy of the Government towards the development of communication after the Great Revolt of 1857. The Government Report said, 'In a great measure during the past year from the pressing necessity of providing Military accommodation for Troops, and has been able to give practical attention to the formation of a system of Imperial Roads throughout the Provinces'²⁵. According to George Kotturan "Its (Darjeeling) use as a military base for the defense of the trade route to Tibet through Sikkim was apparent. From its commanding height, the whole of Sikkim and the neighborhood could be observed and protected. A British garrison stationed there would be the best bet for the security of the whole area"²⁶. Mr. J.W. Grant, Commercial Resident at Malda, also strongly advocated the occupation of the Darjeeling to the Governor General, Lord William Bentinck for military and sanatorium purpose²⁷. British other officials also appreciated the frequent benefit of the annexation of Darjeeling²⁸. In these circumstances, Darjeeling was ceded on 1st February 1835 between the agreements of the Company authorized General Lloyd and Raja of Sikkim²⁹. Their assumption was not too much wrong; shortly they exposed its unlimited economic potentiality due to Trans Himalayan trade route between British India and Tibet and Even Central Asia³⁰. In 1864, at the time of Bhutan War, establishment of a military cantonment within the Buxa Wild Life Sanctuary and thereafter annexation of Western Doors in the same year, due to that reason, the authority soon realized the necessity of railway communication for the political and commercial protection of the Duars

region of Bengal. Therefore, foundation of railway in northern Bengal and its extensions up to extreme north and north-east was eventually essential to the colonial authority.

3.1.5. Need of a Summer Capital:

Hill stations can be traced to the effort of the Colonial Government in the early nineteenth century to establish sanatoriums within the subcontinent where European officials could recover from the heat and disease of the tropic³¹. According to Dane Kennedy “Hill stations were a part of the imperial system –that is a part of the apparatus that allowed the British to rule India—and far more integral part than their nostalgic guises suggested” They served as vital centers of political and military power, especially after the 1857 revolt³² British anxieties augmented after the revolt of 1857 about their security on the plains and sensitive their appreciation of the safety to the hills. As a result, civil and military authorities began to shift their headquarters to hill stations wherever reasonable and for, however, long possible³³

Pamela Kanwar quite clearly mentioned in the book *Imperial Simla*, that the typical hill station, Simla was profoundly shaped by its political role as the so-called summer capital in India³⁴. Due to hot and humid sub-continental climate, it was really tough for the Colonial Government to satisfy and encourage the higher European officials to continue their service in India. But why did they look upon at Darjeeling? Company urgently was searching cool climate sanatorium center from the first half of the 19th century for the higher administrators, mainly during the month of summer. However, most of the early hill stations were far away from the capital Calcutta. In the very beginning, Government tried to establish Cherapungi as an experimental sanatorium³⁵. Even so, due to huge rainfall and fear of malaria, it soon rejected, and they were in search of a native place like Darjeeling, which situate nearby Calcutta³⁶.

If we study “The First Official Record Connected with Darjeeling,” it would be clear that did how the authority feel the importance to the foundation of a sanatorium at Darjeeling³⁷. Lieutenant Colonel Lloyd and Mr. Grant, the Commercial Resident at Maldah jointly took essential to motivate Lord William Bentinck, Governor General of India to establish a sanatorium at Darjeeling. In that circumstance, Bentinck requested Captain Herbert, the Deputy Surveyor General, to explore the tract of the Sikkim Hills in company with Mr. Grant. Captain Herbert and Mr. W. Grant respectively reported on 20th and 21st April, 1830. The Court of Director had received the reports relating to the spot, and expressed a hope to hear that the local government had found it practicable and advisable to establish a sanatorium at Darjeeling. The Honorable Court considered that it might prove a valuable depot for the temporary reception of European recruits, and even a permanent cantonment for a European regiment³⁸. Later, Lord William Bentinck, Governor General of India, had also been favorably willing to the recommendation for the foundation of

Darjeeling as a sanitarium, noting in a minute he agreed, "the great saving of European life and the consequent saving of expenses that will accrue both to individuals and to the state." After that, Colonel Lloyd was appointed to negotiate with the Raja of Sikkim on the subject to the establishment of a sanatorium at Darjeeling. As a result, on 1st February 1835, the Raja of Sikkim presented Darjeeling to the East India Company³⁹.

In this respect, the study of aspects behind the foundation of Darjeeling as a sanatorium excessively correlated with the study of the foundation of Railways in Darjeeling. The administrative report of Bengal evidently indicates the need of smooth communication all over the year, which basically impossible during the rainy season due to frequent land sliding. The Government report as well supports the colonial trading and administrative importance. 'The line would open up a country of great commercial importance now sealed up for eight months of the year, and most inaccessible to the officers of Government and other travelers at all seasons ⁴⁰'. The report clears that the accessibility of Darjeeling all over the years basically at summer season was vital to the colonial authority for the recovery of British Government officers. Therefore, the line was essential to connect Darjeeling with Calcutta, capital of India (before 1911) as well as Bengal for the European officials.

3.1.6. Drawback of the Conventional Communication System:

Under these circumstances, communication up to extreme northern part of Bengal, including Darjeeling and Doars was very essential. Following the introduction of railways in India as well as in Bengal (in 1854), the authority soon realized the transformation of the conventional transport system to secure their political and commercial interest. Diversity in climate and landscape were the main obstacles behind the prospects and problem of the transportation in Northern Bengal. As well as, the conventional mode of transportation like waterways and roadways highly depended on two important variables like seasonal weather and nature of landscape.

Before the foundation of the Company's rule in Darjeeling, the communication was extremely backward. Very few narrow rough tracks through forests and irregular wicker bridge over the torrents existed. The ruling family of Sikkim was of Tibetan origin. Therefore, the government of Sikkim was less interested towards southward communication than the northward communication. According to the Grant memorandum of 1930 only two northward routes continued from the plane to the hills, one was 'Nagree' pass and the other by the 'Sabbok Golah'⁴¹. In 1938, *A Guide to Darjeeling* was published. It mentioned that the journey from Calcutta to the foothill of Darjeeling was too lengthy and taking 98 hours.

Table No. 3.1.3

The Total Descriptions of Journey from Calcutta to the Foothill of Darjeeling

Calcutta to Malda	54 hours
Malda to Dinajpur	16 hours
Dinajpur to Titaliya	20 hours
Titaliya to foothills of the Darjeeling	8 hours

Source: A guide to Darjeeling published in 1838. Cited in Das, A.J. *Darjeeling, Bengal District Gazetteers*, Bengal Government Press, 1947, P. 179.

According to Sir Hooker's description, the journey from Calcutta to Darjeeling would take five or six days, which were full with discomfort and expensive. He explains that the carrying cost of the cart from Karagola Ghat to Ganges, to the foothills of the hills was Rs.240⁴². Even so, in 1873, a trip to Darjeeling was an eight-day suffering for the artist Edward Lear, whose cart broke down whose and coolies fled⁴³.

Lieutenant Napier first time took the initiative to solve the intricacy of the communication. A road was constructed for years 1839 to 1848 between Siliguri to Darjeeling, which presently known as Old military road or Pankhabari road. The road was constructed from Matigara to Ghum via Kurseong and Dow Hill. However, the wheel traffic was very inconvenient due to winding way by sharp ascent and for which the cost was too high (rupees two per maund from Pankhabari to Darjeeling)⁴⁴ when the price rate of rice was between rupees two to four per maund in the hills (in 1871)⁴⁵. Due to failure of the first experiment, authority realized the necessity of the new cart road toward Darjeeling. In that circumstance, in 1860, the government started construction of a cart road, and the road was opened for traffic in 1864, and the total construction was completed 1869. Presently, this is known as Hill Cart Road, which is even today taking vital role to communicate between Darjeeling and Siliguri. At the same time, to improve the plane's communication a road was opened from Karagola Ghat on the Ganges opposite of Sahebganj to Siliguri with the cost of Rs.14, 68,000, which known as the Ganges Darjeeling Road⁴⁶.

The foundation of the Hill Cart Road failed to solve the problem of Communication in Darjeeling. Due to severe landslide in the rainy season, the cost of the maintenance was rising tremendously. The heavy cost of keeping (Yearly, 1.5 lacs) to repair and maintenance was no doubt one of the main reasons behind approving to the proposal of the railway in Darjeeling⁴⁷. According to L.S.S O 'Malley "... cheapness of construction and the safety of the line were matters of the first consideration" for the foundation of railway⁴⁸.

In plain, the problem of communication was something different. According to the Annual Administrative Report of Coochbehar, in the year 1878-79, the state had 223 miles of roads under the management of Public Works Department⁴⁹. In 1893, the Government also established a 'Communication Improvement Fund' to develop and care the transport system of the state⁵⁰. From the beginning of the 19th century, according to Buchanan Hamilton, the communication system of the state highly depended on climate. Nearly all parts of the state were available by bullock carts over a network of fair-weather track only between November and May. At the advent of the rainy season, the roads of the state almost become impossible for wheeled traffic⁵¹. The statistics of rainfall in the years 1872 to 1875 indicate that near about one-third of the year was affected by a massive rainfall. So why the roads and bridges would damage by the huge amount of rainfall and flood (**follow Table-3.1.4**). The floods would take place not only due to local rainfall, but also for the heavy rains in the Bhutan hills⁵². Another serious problem was repairing of the roads during the rains, when the ground was wet and slushy. It was impossible to procure sufficient labour. The imported workers and coolies under Public Works Department would have been returned before the rains to their home, with very few exceptions. The local labors were also unavailable to maintain and repairing the roads⁵³.

Table No. 3.1.4

Statistics of Rainfall in Coochbehar State for the Years 1872-75

Year	Amount & Wet days	J	F	M	A	M	J	J	A	S	O	N	D	Total	
		A	E	A	P	A	U	U	U	E	C	O	E	Inches	Wet Day
1872	Inches	1.2	....	.52	8.29	11.4	43.20	16.1	26.5	18.6	6.57	...	...	132.59	
	W.Days..	1	..	2	10	16	21	18	22	17	5	...	...	...	112
1873	Inches	....	....	1.46	6.97	3.53	51.64	22.9	18.1	10.1	...	...	...	114.80	
	W.Days	...	...	2	13	6	23	21	20	16	...	...	...	...	101
1874	Inches..	1.4	63	.93	8.03	15.7	39.93	40.7	16.7	33	10	...	...	157.22	
	W.Days..	2	4	4	9	18	24	22	23	21	9	...	...	...	136
1875	Inches	20	...	17	6.41	11	23.93	18.4	24.3	5.19	...	...	...	89.80	
	W.Days..	2	....	2	9	20	24	18	21	14	...	...	...	...	110

Source: Hunter, W.W, A Statistical Account of Bengal, Vol. X, London, Trubner & Co, 1874; rpt. Delhi, D.K. Publishing House, P.442

According to the account of Captain Lewin, Coochbehar state had a six rivers for navigable throughout the year. There were twenty more minor streams, which were not able to use for boat traffic except during the rainy season only⁵⁴. The territory lies between two great rivers, the Brahmaputra and Tista, and the crossroad is directed to meet the main starting place for such navigation⁵⁵. So the river traffic failed to serve the purpose of public transportation of the state, but took a significant role in export - import trade before the foundation of the railway in Bengal, Burma and Assam. The navigability of the six important rivers' (Tista, Singimari, Torsha, Dharla, Kaljani, Raidhak & Godadhar) of the state was 100 mounds or four ton throughout the year. Therefore, the rivers failed to serve the actual need of commercial communication which eventually essential to flourish the export -import trade⁵⁶.

The extreme southern districts of North Bengal were highly marshy and water-logged, where the condition of the roadway traffic was very poor. O'Malley has drawn the picture of a backward roadway transport condition of the Pabna district:

“The many rivers, *bils* and marshes render it impossible to construct permanent roads except at great expense. Large areas are swampy and water-logged, the water lying in them to a considerable depth during the rains. Roads have to be raised on embankments, which are liable to be breached by floods: where they are not raised, they are often mere tracks. The up-keep of the roads is also difficult, because the borrow-pits, from which earth is taken, remain full of water till late in the year, and they can only be utilized during the comparatively short time that they are dry. There are, moreover, numerous water-courses and rivers which require large and expensive bridges. Lastly, the soil is composed of alluvium, and all road metal has to be imported. There are, however, excellent water communications—the rivers are, in fact, the main trade routes—and in recent years the district has been given connection with other districts by the branch railway connecting Sirajganj with the main line of the Eastern Bengal Railway”⁵⁷.

3.1.7. Development of Railways in North Bengal:

In 1825, Stockton to Darlington, the first railway line opened for the people of England. The initial proposal for the foundation of railway in India prepared in 1832. In India, between the years 1844 to 1845, the necessary survey conducted for the construction of railway lines in Eastern and South- Western India. On 4th July 1850, the recommendation for the construction of the railway line was suggested by Lord Dalhousie in his famous Railway Minute, which accepted by the Company's authorities in England. Accordingly, the Great Peninsular Railway opened the first railway line (34.44.km) in 1853 between Bombay (present Mumbai) and Thana (present Thane), which inaugurated a new dimension in the history of the communication system in India.

In 1854, the East India Railway (EIR) connected Howrah and Hooghly, thus the railway entered in Bengal. In 1855, the Railway progressed westward up to Raniganj. In 1862, the next phase of railway expansion commenced on the eastern side of the Hooghly River with the Eastern Bengal Railway (EBR) spanning the 45 miles between Calcutta and Ranaghat (in Nadia district). The Eastern Bengal Railways came into existence in the 1850s to construct the 110-mile route from Calcutta to Kushtia. In 1871, Eastern Bengal Railway reached the western bank of the Padma and established railheads at Kushtia (Nadia) and Goalando (near Faridpur).

In 1870, the first construction work of the Meter gauge line started from Siliguri to *Poradaha*, a junction near Kushtia. At *Poradaha* junction, the EBR divided in two lines; one extended up to *Faridpur* on the right bank of the Ganges; another extended northwards up to *Damukdia Ghat* on the right bank of river Ganges. Before 1915, there was no bridge over

the Ganges or *Padma*, because of that the line started from a point, south of *Paksey* (Paksi) station on the left bank of the Ganges, and the EBR steamer service was continuing transport service between two *Ghats*. In 1915, the bridge was completed over the Ganges (Padma), which was over one mile (5900 feet). At that time, it was one of the longest bridges around the world, and its construction was a great feat of engineering, which was further named as *Hardinge Bridge* according to the name of Lord Hardinge. After crossing the *Paksey* the next important junction of the EBR was *Ishurdi* 4.3/4 miles from *Paksey*. *Ishurdi* was a junction situated within the Rajshahi district from where a branch line opened in 1917. It connected *Ishurdi* with *Sirajganj* and were 52 miles long, which also known as Sara-Sirajganj Branch line. At that time a daily passenger train was introduced between Calcutta and Sirajganj Ghat. A motor service also ran between Pabna and *Ishurdi* in connection to the railway.⁵⁸ After *Ishurdi*, the next prominent station of the NBSR was *Santahar* from where a branch line was extended up to *Phulchari* via *Bonapara* in the year 1900-1901, later this line was extended *Bonapara* to *Kaunia* junction on the right bank of river Tista. After *Santahar*, the subsequent significant junction of NBSR was Parbatipur, here another important line of Old Eastern Bengal Railway (OEBR) crossed the Parbatipur junction which connected to Katihar via Barsoi and Raiganj dated on 1st July 1889. The OEBSR line extended eastward up to Kaunia junction through Rangpur town.

Table No: 3.1.5

Old Bengal and North Western Railway (Katihar to Parbatipur)

Sections of Railways	Date of Opening	Kilometers
Katihar to Barsoi	1.7.1889	38.91
Barsoi to Kishanganj	15.12.1892	56.50
Barsoi to Raiganj	1.7.1889	21.42
Barsoi to Indo-Bangladesh Border at kilometrage 57.27 from Barsoi	15.02.1888	32.98
Total		149.81

Source: *Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968, p.122*

The OEBSR as well crossed the Tista River and extended towards Lalmonirhat junction, from where the BDR started for north-westwards direction. The main line of OEBSR was

extended to Dhubri in Assam via Gitaldaha, in Coochbehar state, and accordingly, the line merged with the CBSR. After crossing Parbatipur, the NBSR extended towards north up to Jalpaiguri via Haldibar, and as a result the Northern Bengal State Railway opened for traffic up to Jalpaiguri in 1878.

3.1.8. Brahmaputra – Santahar (Sultanpur) Branch Railway :

The Northern Bengal State Railway opened 39 miles route through the western part of the Bogra district. The Brahmaputra–Santahar (Sultanpur) Branch Railway from Santahar via Bogra to Phulchari completed for traffic during the year 1900-01, extended for 34.69 miles through the Bogra district from west to east⁵⁹. It was constructed out of the funds of a private company, but was subsequently acquired by the Government as a state railway⁶⁰.

3.1.9. Godagari -Katihar Extension (EBSR):

Godagari-Katihar Extension was vital railways, which helped to connect northern Bengal with central and northern India. The line was established on 1st January 1909, and extended Katihar to Godagari Ghat on the left bank of the Ganges in the Rajshahi district via Malda. After crossing the river Ganges, it was connected with EBSR at Lalgola Ghat and which connected Calcutta. The total length of the Godagari–Katihar extension from Katihar to Godagari was 132.5928 km. Presently, out of 132.5928 km, 114.89 km belong to Indian territory and the rest of the 17.7028 km belongs to present Bangladesh⁶¹.

3.1.10. Bengal Duars Railway:

In 1864, after the British annexation in Western Duars, Government wanted to open the Duars region, mostly to develop the tea industry, and they realized the necessity of a rapid communication system like Railways⁶². In these circumstances, on 27 April 1891 a principal contract was signed between the Secretary of State and Messers Octavious Steel and Company for the construction, maintenance, management and working of the Bengal Duars Railway Company's original line, including the ferries connected therewith. At the initial stage, the return was excessively low and the risk was too high. The railway companies had a very little interest due to uncertainty of profit. Therefore, to attract the investors the Government of India offered assistance in the form of subsidies, which popularly known as the 'guarantee system'. The system was also applied to the foundation of the Bengal Duars Railway. In this respect, the District Board and Messers Octavious Steel and Company signed an agreement. As a result of the agreement, the District Board of Jalpaiguri grant to pay subsidies to the Company, not exceeding Rs. 4000, as might be required to make up the net profits of the original line for each year to five percent on the capital sum expanded. According to the agreement, the land was provided by the government free of cost to the company. It also supplied free timber for making railway sleepers from the reserved forests of North Bengal to establish the initial railway line⁶³.

Letter to the Secretary of the Board of Revenue from Government of Bengal, PWD, and Railway as well indicates the granting of land free of cost and need of the land acquisition for the construction of the railway line in Duars⁶⁴. After the agreements between Company and Government, the Company started the foundation of railway in the Duars region of North Bengal. On 15th January 1893, the first railway line was opened between *Barnes Ghat* (East bank of Teesta) to *Domohani* and *Domohani* to *Dam Dim*. Thus, the Bengal Duars Railway (BDR) started its voyage in Jalpaiguri district. On 1st June 1893, after few months, a branch line was also opened for the traffic from *Lataguri Junction* to *Ramshai*. In 1931, the first railway line of the BDR, *Barnes Ghat* to *Domohani*, was abandoned and later reopened on 1st June 1933. On 30th July 1931, the main line extended *Domohani* to Kilometer 106.22.

The statement below indicates the details about the foundation of the main and branch line of Bengal Duars Railway.

Table No: 3.1.6

Foundation and Extension of Bengal Dooars Railway (Meter gauge-1.00 meter)

Section of Railway	Date of opening	Kilometers	Total
Main Line-			
Barnes Ghat(East bank of Teesta) to Domohani. (Abandoned in 1931)	15-1-1893	---	
Domohani to Dam Dim.....	15-1-1893	41.35	
Kilometer 106.22 to Domohani.....	30-7-1931	4.36	
			45.71
Branch line-			
Lataguri Junction to Ramshai.....	11-6-1893	8.99	
Domohani to Barnesh Ghat.....	1-6-1933	8.87	
		-----	17.86
Total.....			63.57

* Source: *Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968, p.145*

After the foundation of the main line, the company and government, both realized the need of further extension. In 1893 to 1900, within seven years, it was possible and encouraged due to remarkable increase in the net earnings of the BDR. Thereafter; the Secretary of State and the Bengal Duars Railway Company signed series of supplementary agreements on 2nd March 1898, 27th September 1900 and 7th November 1901. Due to these agreements, the main line extended to the east, west and southward direction between the years 1900 to 1903 (Follow Table No: 3.1.7). As a result of additional agreements between same on 6th July 1916 and 21st April 1927 the company extended accordingly between Chalsa Junction to Metelli (10th June, 1918) and Mile 66 to 66.1/2(30th July, 1931)⁶⁵.

The total extensions of the Bengal Duars railways are as follows:

Table No: 3.1.7
Total Bengal Dooars Railway Extension (Meter gauge-1.00 meter)

Section of Railway	Date of opening	Kilometers	Grand total
<i>Eastern extension-</i>			
Mal Jn. to Chalsa Jn.....	1-4-1901	8.24	
Chalsa Jn. to Chengmari.....			
Chengmari to Dalgaon.....	1-1-1903	21.74	
Dalgaon to Madarihat.....	23-3-1903	24.99	
Chalsa Jn. to Metelli.....	14-6-1903	15.16	
	10-6-1918	6.24	78.55
<i>Southern extension-</i>			
Barnes Jn. to Mile 61,1/2(Abandoned in 1931).....			
Mile 66 to 61,1/2.....	20-4-1900	.....
Mile 61,1/2 to Baura.....	30-7-1931	7.27	
Baura to Bhotemari.....	20-4-1900	37.93	
Bhotemari to Lalmanirhat	21-10-1900	26.97	
	20-11-1900	33.53	105.70
<i>Western extension-</i>			
Dam Dim to Odlabari.....	1-5-1901	4.52	
Odalabari to Bagrakote.....	1-1-1902	6.21	10.73
Grand Total.....			194.98

Source: Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968, p.146

In 1893 to 1933, the total extension of the BDR was 258.55 kilometer, and the headquarter was Domohani on the left bank of the River Tista⁶⁶. After that, the Govt. of India purchased the line in January 1941 and merged with the Old Eastern Bengal Railway, during partition of India; the line was also with the same⁶⁷. Presently, it is a part of the North Frontier Railway.

3.1.11. Coochbehar State Railway:

In 1883, it was proposed that a railway line would be established between *Moghalhat* in Rangpur and *Dhubri* in Assam via *Kaunia* to extend the railway network in Coochbehar state⁶⁸. The plan was rejected after the consultation with the authority of Coochbehar State and Bengal Central Railway⁶⁹. Within a short time, an alternate plan was accepted, which proposed the railway line between Coochbehar town and *Mughalhat* in Rangpur district⁷⁰. Government of Coochbehar State realized the financial requirement, and they applied for a loan to the British India Government for a huge amount of money to establish the proposed line. Government of India sanctioned the loan amount of Rs.8.00.000 @ 4 % interest instead of mortgage of the *Chaklajat Zamindaries* in the Jalpaiguri district for the construction of railway from Gitaldaha to Coochbehar town⁷¹. Maharaja of Coochbehar appointed Calica Das Dutta, *Dewan* of the state to take up the land required for the proposed railway line and properly compensate the people evicted in the process of foundation. Kumar Gajendra Narayan, superintendent of agriculture, was assigned to make an estimate of the compensation. The total amount of the compensation was estimated Rs.8, 09,399⁷².

The construction of Coochbehar State Railway completed during the year 1892. The line opened for goods traffic on 15th September 1893, and the passenger traffic on 1st March 1894⁷³. Though, Maharaja of Coochbehar was the owner of the Coochbehar State Railway, but the management of the line was under the North Bengal State Railway authorities and subsequently in the hand of Assam Railway⁷⁴. Initially, the line was the narrow gauge (0.762 meter) , after that it converted in to meter gauge (1 meter) and extended on 14th February 1910 and up to *Gitaldaha* on 13th April 1910⁷⁵. Table below (Table No: 3.1.8) draws the overall portrait of the extension the Coochbehar State Railway between the years 1893 to 1950⁷⁶

Table No: 3.1.8

Foundation and Extension of Coochbehar State Railway

Sections of Railway	Date of Opening	Length
		Kilometre
Gidaldaha (Kilometre 2.35) to South bank of River Trosa	15.9.1893	27.12
North bank of river Torsa to Coochbehar Town.....	15.12.1898	5.18
Torsa Bridge	16.5.1900	17
Coochbehar Town to Kholta ,near Alipurduar (South Bank Of Kaljani).....	15.4.1899	17.64
Kholta to Alipurduar (South Bank Of Kaljani).....	18.1.1900	0.79
Kilometre 2.35(Gitaldaha) to New Gitaldaha.....	25.3.1950	1.61
Total		52.31

Source: Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968, p.126

Initially, the line was separated from the Coochbehar town, the capital of Coochbehar State. On 15th December 1899, 5.18 kilometer line was established between the north bank of river Torsa and Coochbehar town, and the line failed to connect with the main line due to an obstacle for the River Torsa. In 1900, the bridge was completed over the river Torsa. Therefore, the obstruction removed and the railway service continued between *Gitaldaha* and Coochbehar Town Station⁷⁷. On 4th April 1899, after the southern extension, the Coochbrhar State Railway also expanded towards north from Coochbehar Town station to *Kholta*, near *Alipuar Duar*. The line further extended 0.79 kilometer northwards, from *Kholta* to the south bank of River *Kaljani*⁷⁸.

On 25th March 1950, the final extension of the Coochbehar State Railway was constructed, before that the line transferred to the Government of India with effect of the merger act from 1st January 1950. The line and was an integral part of the Assam Railway as a result of the merger of the Coochbehar State with West Bengal. Presently, the line treats as an integral part of North Frontier Railway⁷⁹. The Table No: 3.1.9 illustrates the brief extension of the total 52.31 kilometer railway line of the Coochbehar State Railway from Gitaldaha to South Bank of river Kaljani, near Alipurduar.

After the foundation of the CSR, another most significant task of the Colonial Govt. was to complete the network by linking with the other railways of North Bengal. In the year 1900, the *Santarabari extension* was opened to link with *Rajabhatkhawa* under the supervision of Old Eastern Bengal Railway⁸⁰ (**Follow Table No: 3.1.9**). This extension was unable to communicate with the main line of the Coochbehar state Railway owing to an obstacle by the river Kaljani for the traffic between *Kholta* to *Rajabhatkhawa* via *Alipurduar*. On 18th January 1900, the bridge was constructed over the river *Kaljani*, and the line entered in the Jalpaiguri district at *Alipurduar*, which further linked with the Old Eastern Bengal Railway section⁸¹. On 1st April 1912, the CBSR accordingly connected with the Bengal Duars Railway⁸².

Table No: 3.1.9

**Old Eastern Bengal Railway Section which linked with CSR
(*Jainti Branch Dominion Section*)**

Section of Railways	Date of Opening	Length
South bank of Kaljani river(Kholta) to Alipurduar.....	18-1-1900	1.03 km
Alipurduar to Rajabhatkhawa.....	05-4-1900	16.05 km
Rajabhatkhawa to Jainti.....	1-2-1901	14.77 km
Total		31.85 km

Source: *Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968, p.122*

The Coochbehar State Railway also linked with the North Bengal State Railway between Gitaldaha and Parbatipur via Rangpur, which took an important role to communicate Coochbehar State with Calcutta and other part of Bengal and India⁸³. Another important linkage of the CSR was with the branch of Assam Railway (**Follow the Table No: 3.1.10 & 3.1.11**); consequently, the CSR connected Dhubri, a most important port of Assam⁸⁴.

Table No: 3.1.10

Old Eastern Bengal Railway Section which linked with CSR

Main Branch

Section of Railways	Date of Opening	Length
Southern Border of the Coochbehar to Gitaldaha Junction.....	2-1-1902	2.51km
Gitaldaha to Bamanhat.....	23-9-1902	18.64km
Total		21.15km

Source: Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968, p.122

Table No: 3.1.11

Old Eastern Bengal Railway Section which linked with CSR

Dhubri Branch

Section of Railways	Date of Opening	Length
Eastern Border of the Coochbehar to Golakganj.....	23-9-1902	5.87km
Golakganj to Dhubri.....	23-9-1902	17.92km
Total		23.79km

Source: Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968, p.122

3.1.12. Darjeeling Himalayan Railway:

Foundation of Railway in the hilly tract like Darjeeling was so hazardous and most expensive due to nature of land and climatic conditions. Instead of these obstacles, the Colonial Govt. decided to establish Darjeeling Himalayan Railway (DHR), the most expansive and gigantic engineering work. Darjeeling Himalayan Railway registered in 1879, and the owner of the DHR was the Darjeeling Himalayan Railway Company (DHRC). On 8th April 1879, a contract between the Secretary of State and Mr. Franklin Prestage on behalf of DHRC was signed. The construction of the DHR was started according to this agreement. Later, according to the same agreement, the maintenance, management and working of the DHR were continuing⁸⁵. The agreement also ensured the employ of the Government Land and the right to use of the existing Hill Cart road free of cost. It was as well decided that other lands necessary, if any, to be acquired by the Government and transferred to the Company at cost price. It was also decided the Government undertook to pay to the DHRC any sum required to make up its gross receipts to two lakhs of rupees annually, which would include charges for carriages of mails, troops or stores⁸⁶. The progress and development of Darjeeling Himalayan railways are as follows:

Table No: 3.1.12

Darjeeling Himalayan Railway (Main Line)

Section of Railway	Date of Opening	Kilometers	Total
<i>Siliguri to Kurseong</i>	23.08.1880	51.09	
<i>Kurseong to Sonada</i>	1.2.1881	15.29	
<i>Sonada to Ghum</i>	4.4.1881	9.45	
<i>Ghum to Darjeeling</i>	4.7.1881	5.84	
<i>Darjeeling to Darjeeling Bazar</i>	16.6.1885	0.40	
Total			82.07
Regarding Line-- between Ghum to Darjeeling	10.03.1919	0.12	0.12
Grand Total			82.19

Source: *Source: Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968 P. 132.*

After the foundation of the main line, the Government of India realized the necessity of further extension. According to contract between the Secretary of State and the Darjeeling, Himalayan Railway Extensions Company on 25th April, 1914, DHR founded another extension line between Panchanai to Matigara on 16th March, 1914.

Table No: 3.1.13
The Extensions of Kishangang and Tista Valley Railway line of Darjeeling Himalayan Railway are as follows:

Section of Railway	Date of Opening	Kilometers	Total	Grand Total
Kishanganj Extension-				
<i>Panchani to Matigara</i>	16.3.1914	3.83		
<i>Matigara to Naksalbari</i>	1.2.1915	19.55		
<i>Naksalbari to Talabpur</i>	1.5.1915	39.02		
<i>Talabpur to Islampur Alwabari</i>	1.11.1914	13.84		
<i>Islampur,Alwabari to Kishanganj</i>	15.6.1914	30.99		
Total			106.78	
Tista Valle Extension-				
Siliguri to Sevok	16.3.1914			
Sevoke to Sivang	1.5.1915	46.81		
Niyang to Gieellockhalo	21.9.1915			
			46.81	
Grand Total				153.59

Source: Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968 P. 135.

Presently, except the main line from Siliguri to Darjeeling, the other two branches of the Darjeeling Himalayan Railways are abandoned. In what sense the DHR was established it failed to serve the purposes. After the commencement, the modern motor vehicles in 1930, the road way communication rapidly developed, and nowadays it is the main way of communication between plain and hilly mountain. However, still now the Darjeeling Himalayan Railway has some popularity in the sense of communication and tourism. The

DHR is the first, and is, at the same time, the most outstanding, example of a hill passenger railway. Since 1999, the train has been a World Heritage Site as listed by UNESCO.

The above discussion mainly has explored the expansion of railway of the undivided North Bengal. However, the partition of India in 1947 had a remarkable impact on the communication system of the same region. We may say that the communication with the Assam and northern district of West Bengal extremely interrupted due to partition.

As a result of partition the northern district of West Bengal and the whole state of Assam cut off from the rest of the Indian union. Commercial strategic and political considerations rendered inevitable for the construction of a rail link between Assam and Northern districts of West Bengal, on the one hand, and the rest of India on the other. The work on the project started in January 1948, and completed early in 1950 at a cost of rupees 8.90 crores, with a total route mileage of 1425. The work of construction was a difficult task as the region was liable to very heavy monsoons. The construction of bridges along the three turbulent rivers, Tista, Torsa and Sankosh is a tribute to the Indian engineering zeal and capacity⁸⁷.

¹ Binap Chandra, *Economic Nationalism and the Railway Debate*, circa 1880-1905, *Our Indian Railway, Themes in India's Railway History*. Ed. by Roopa Srinivasan, Manish Tiwary, Sandeep Sials, Education Books, Delhi, 2006, p.77

² G.K. Gokhale: "The Indian people feel that this construction is undertaken principally in the interest of English commercial and moneyed classes, and that it assists in the further exploitation of our resources."

Bipan Chandra, *Op*, cit p.77

G.V.Joshi: "It was Lord Dalhousie's dream to strengthen the dominion not only of English rule, but of English trade and commerce in India"

G.V. Joshi, *Writing and Speeches*, Poona, 1912, Cited in Bipan Chandra, *Op*, cit p.95

³ . Dalhousie's Minute, 20th April 1853 Parliamentary Papers, attached to Railway Home Correspondence, 1852-53, LXXVI, (787), PP.115-16

⁴ . Minute by Dalhousie on the Introduction of Railways in India, as Submitted to the Court of Directors, 4 July 1850, Cited in 'Our Indian Railway, Themes in India's Railway History' Ed. by Roopa Srinivasan, Manish Tiwary and Sandeep Silas, Foundation Books Pvt. Ltd, Delhi, 2006, pp.26-27.

⁵ . Court to Governor General in Council, 7th May 1845, Legislative Departments No.11, Parliamentary Papers, House of Commons, 1845, XXXIV, (327), P.1, Cited in Hena Mukherje, *Op* cit pp.60-61

⁶ Report on the Administration of Bengal , 1871-72, Part 1,Part 2,Secretariate Press, Calcutta, 1872,p.123

⁷ Annual Administrative Report of Bengal 1872-72,p.276

⁸ . D.H.E. Sunder :Survey and Settlement of the Western Duars, in the District of Jalpaiguri 1889-1895 , Bengal Secretariat Press, 1895, Calcutta, Reprinted by N.L.Publishers, Siliguri,2013.pp.132-35.

⁹ .Benoy Ghosh,Selection from English Periodicals of the 19th century Bengal ,v-vii,1878-80Brhmo Public Opinion,Papyrus ,Calcutta, 1880,p144

¹⁰ Annual Administrative Report of Bengal 1872-72,pp.276-77

¹¹ . O, Malley, L.S.S, Op.cit. p.132

¹² W.W. Hunter: A Statistical Account of Bengal , Vol -X, Turner & Co.,Landon,1877. Reprinted in India 1984, 2009 by Concept Publishing Company(p) Ltd., New Delhi.p.89

¹³ .Virginious Xaxa: Economic Dualism and Structure of Class,Op.cit.p.112

¹⁴ . Darjeeling Himalayan Railway Company :*Darjeeling and its Mountain Railway* , re-print, Calcutta,2001,p.343

¹⁵ . O,Malley,L.S.S, Op.cit. p.84.

¹⁶ .Hunter, W.W, *A Statistical Account of Bengal*, Vol.X, London, Trubner & Co, 1874; rpt. Delhi, D.K. Publishing House, p.216.

¹⁷ . Grunning, J.F, *Eastern Bengal and Assam District Gazetteers, Jalpaiguri*, Alahabad, the Pioneer Press, 1911.p.134

¹⁸ . Grunning, J.F, Op cit., p .148.

¹⁹ . Virginious Xaxa :Colonial Capitalism and Underdevelopment in North Bengal Reviewed work(s):Source: Economic and Political Weekly, Vol. 20, No. 39 (Sep. 28, 1985), pp. 1661.

²⁰ . J F Gruning, ,Op.cit. p 103

²¹ . Virginious Xaxa :Colonial Capitalism and Underdevelopment in North Bengal , Op.cit.p.1659.

²² .The government open forests in this district have to perform no, or very limited functions with regard to the regulation of moisture, and their object is exclusively to provide forest material. The Western Duars themselves are very thinly populated and the requirements of the population are very small indeed. On the other hand timber is much in demand in the districts south of the Duars , specially in Coochbehar, Rangpore and the western districts of Dacca Presidency.

Proceedings of the Board Revenue(Bengal) P/243, March1873,p.126

Cited in Subhajoti Ray : Transformation on the Bengal Frontier, Jalpaiguri 1865-1948,Routledge Curzon, New York, 2002,p.72.

²³ .Progress Report of the Forest Administration in the Lower Province of Bengal P/889.1876&1877p.26

Cited in Subhajoti Ray, Op.Cit.pp.72-73.

²⁴ . Dalhousi's Minute, 20th April 1853 Parliamentary Papers, attached to Railway Home Correspondence, 1852-53,LXXVI,(787),P.117.

²⁵ . Annual Report on the Administration of Bengal Presidency ,1860-61,p.58, Cited in Sunil Kumar Munsii, Op.cit p.27

²⁶ .Kotturan, George, *The Himalayan Gate way: History and Culture of Sikkim*, Humanities Pr, New Delhi,1983, p.60

²⁷ . O,Malley,L.S.S, *Bengal District Gazetteers :Darjeeling*, The Bengal Secretariat Book Depot, Calcutta, 1907,P.20

²⁸ . Palit,Chittabrata, *Origin and Development of Darjeeling, Discursive Hills: Studies in History, Polity and Economy*, Darjeeling ,2007,p.22

²⁹ . O,Malley,L.S.S, Op.cit, p.21

³⁰ . Proceeding of the Lieutenant Governor of Bengal ,May1872.General Department, Letter No.993.dated Jalpaiguri, From Colonel J.C.Hunghton, C.S.I, Commissioner of the Coochbehar , Division to the Secretary to the Government of Bengal ,Public Works Department.

³¹ Dane Kennedy, *The Magic Mountain, Hill Station and the British Raj*, Oxford University Press, Delhi,1996,p.1

³² . Op cit p.4,

³³ . Op cit p.14.

³⁴ Pamela Kanwar , *Imperial Simla*, Oxford University Press ,Delhi, 1990.

³⁵ . Bhattacharya , Malayshankar, *Darjeeling Rupantarer Itibritto*, Culcutta,2002,p.12.

³⁶ . Pinn, Fred, *The trade to Destiny ,Darjeeling Letters 1839*,Oxford University Press, Calcutta,1986,P.12

³⁷ . The first official record connected with Darjeeling is a letter from Lieutenant Colonel Lloyd , dated 18th June, 1829, Mr. Grant , the Commercial Resident of Maldah , had about the same period brought frequently to the notice of the Governor General (Lord Willam Bantick) the numerous advantages promised by the establishment of a sanatorium at Darjeeling.

H.V. Bayley , G.H. Huttman, *The First Official Record Connected with Darjeeling*, Bengal Military Orphan Press,Calcutta,1838, p.3

³⁸ . H.V. Bayley , G.H. Huttman Op Cit. p.3-4

³⁹ . Rai Monmohan Chakrabatti Bahadur , *A Summary of the Changes in the Jurisdiction of Districts in Bengal ,1757-1916*, Revised and updated by Kumud Ranjan Biswas ,Department of Higher Education ,Govt. of West Bengal, 1999,p.12

⁴⁰ *Report on the Administration of Bengal , 1871-72, Part 1,Part 2,Secretariate Press, Calcutta, 1872,p.123*

⁴¹ . Das, A.J. *Darjeeling, Bengal District Gazetteers*, Bengal Government Press, 1947, P. 179.

⁴² . O,Malley,L.S.S, Op.cit, p.133

⁴³ Edward Lear, *Indian Journal*, ed. Ray Murphy, London , 1953.pp.56-62.

⁴⁴ . Das, A.J, Op.cit, p.179.

⁴⁵ . O,Malley,L.S.S, Op.cit. p.112

⁴⁶ . Das, A.J, Op.cit, p.180

⁴⁷ . Das, A.J, Op.cit, p.192

⁴⁸ . O,Malley,L.S.S, Op.cit. p.141

⁴⁹ *The Annual Administrative Report of the Coochbehar State for the Year 1878-1879*, Coochbehar State Press, Coochbehar, 1880, p.69.

⁵⁰ *The Annual Administrative Report of the Coochbehar State for the Year 1899-1900*, Coochbehar State Press, Coochbehar, 1901, p.41.

⁵¹ Majumder, Durgadas, Op. cit, p.114.

⁵² Hunter, W.W, *A Statistical Account of Bengal*, Vol.X, London, Trubner & Co, 1874; rpt. Delhi, D.K. Publishing House,P.394.

⁵³ *The Annual Administrative Report of the Coochbehar State for the Year 1878-1879,*

Coochbehar State Press, Coochbehar, 1880, p.69.

⁵⁴ Hunter, W.W, *A Statistical Account of Bengal, Vol.X, Op. cit, p.334*

⁵⁵ Hunter, W.W, *A Statistical Account of Bengal, Vol.X, Op. cit, p.397*

⁵⁶ Hunter, W.W, *A Statistical Account of Bengal, Vol.X, Op. cit, p.334*

⁵⁷ . O' Malley : *Bengal District Gazetteers* , Pabna, Bengal Secretariat Book Depot, Calcutta,1923, pp.75 & 76.

⁵⁸ .O' Malley, *Pabna district Gazetteers, Op.cit.p.75*

⁵⁹ .*Annual Administration Reports for Roads and Buildings, Irrigation and Railways for the Year 1900-01, Public Works Department, Government of Bengal. Calcutta,P.3*

⁶⁰ .J.N. Gupta,*District Gazetteers of Eastern Bengal and Assam, Bogra,Pioneer Press, Allahabad,1910,p.109*

⁶¹ . Ministry of Railways, "*History of Indian Railways constructed and in progress corrected up to 31.3.1964*", Ministry of Railways, Government of India, 1966, p.122

And

L.S.S. O'Malley,*Bengal District Gazetteers, Rajshahi,Bengal Secretariat Book Depot, Calcutta,1916,p.113*

⁶² . Grunning, J.F, *Op cit., p .148.*

⁶³ . Ministry of Railways, "*History of Indian Railways constructed and in progress corrected up to 31.3.1964*", Ministry of Railways, Government of India, 1966, p.145

⁶⁴ . '*.... the construction of the Dooars Railway from Jalpaiguri to the tea districts in the western dooars , all land being supplied by Government free of charge. In order that this Department may be in a position to know what grant will be needed , I am to request that you will be so good as to obtain an estimate from the Commission of the Rajshahi Division of the funds required during the current financial year to meet the cost of acquisition of the land.*'

Board of Revenue, Branch Railway , File No14/1890, S.No.:1-44

⁶⁵ . Ministry of Railways, *Op cit., p .148.*

⁶⁶ .Busu,Debabrata, "*Itihas Bhugale Jeela Jalpaigurir Railibabasta*", Kiratvumi, ed. Kar, Arabinda , *Jalpaiguri Jeela Sankha,Jalpaiguri,V-2,(Bengali)*

⁶⁷ . Ministry of Railways, *Op cit., p .146*

- ⁵⁸. *The Annual Administrative Report of the Coochbehar State for the Year 1883-84*, The Coochbehar State Press, Coochbehar, 1885.P.12.
- ⁶⁹. Ibid
- ⁷⁰. Majumder, Durgadas, Op.cit, p.119.
- ⁷¹. Letter No. 2061F, on May1891 to the Maharaja of Coochbehar. *The Annual Administrative Report of the Coochbehar State for the Year 1891-92*, The Coochbehar State Press, Coochbehar, 1893.P.14.
- ⁷². Majumder, Durgadas, Op.cit, p.199-200.
- ⁷³. *The Annual Administrative Report of the Coochbehar State for the Year 1893-94*, The Coochbehar State Press, Coochbehar, 1895.P.13.
- ⁷⁴. *The Annual Administrative Report of the Coochbehar State for the Year 1891-92*, Op. Cit. P.14.
- ⁷⁵. Ministry of Railways, Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968,p 126
- ⁷⁶. Ibid.
- ⁷⁷ Ministry of Railways, Op. Cit., p.126
- ⁷⁸ Ibid.
- ⁷⁹ Ministry of Railways, Op. Cit., p.126
- ⁸⁰. *The Annual Administrative Report of the Coochbehar State for the Year 1899-1900*, Coochbehar State Press, Coochbehar, 1901, p.51.
- ⁸¹. Ministry of Railways, Op. Cit., p.122
- ⁸². Ministry of Railways, Op. Cit., p.123
- ⁸³. Mukheerjee, Mukul, Op. Cit., p.128
- ⁸⁴. Ministry of Railways, Op. Cit., p.122
- ⁸⁵. Supplement to the History of Indian Railways, History of Defunct Railway, Railway Board, Govt. of India (Railway Board), 1968.p.132
- ⁸⁶. Supplement to the History of Indian Railways, Op. cit. p.133
- ⁸⁷. K.K.Saxena : Problem and Prospect, A study in the Management and working of Indian Railways, Vora & Co. Publishers Pvt. Limited , Bombay,1962,p.19

Chapter No. 3.2

Comparative Study Between Conventional Transport Systems and Railways

3.2. Comparative Study Between Conventional Transport Systems and Railways:

In this chapter, we applied comparative study between railways and the traditional mode in respect of cost, capability and reliability according to our selected sources. Here it is indispensable to study the nature of Colonial transport policy in respect to the development of railways and conventional mode.

3.2.1. Nature of the Conventional Transport System in North Bengal:

Before going to comparative analysis between the conventional mode of transport system and the railways, it is indispensable to study the nature and role of the roadway and waterway mode of transport system before and after the foundation of the railways in the northern part of Bengal. The nature and role of the traditional mode of transport system in a particular geographical region are highly dependable on the two important variables like; climate and topography. Our physical field within the study area is undivided northern Bengal, including the districts of Darjeeling, Jalpaiguri, Rangpur, Dinajpur, Malda, Pabna, Rajshahi, Bogra and Coochbehar State. Topographically, the extreme northerly part of North Bengal basically the hilly region of the Darjeeling and Jalpaiguri districts, is a part of the great Himalayan Mountain with the problem of heavy land sliding. That was extremely responsible for the uneasy access by the roadway communication system in the hilly track like Darjeeling.

Then the *tarai* is immediately beneath the hills, with ridges and deep valleys of the lower Himalayas. Behind the *tarai*, the mountain's towers are partly high from the plains, which are only about 300 feet above sea-level. In the hilly and *tarai* region naturally there was no probability of the water communication. Therefore, the single way of communication was the roadway traffic. In the hilly track of the Darjeeling districts, the establishment and continuing the roadway traffic was very difficult due to high gradient and heavy rainfall with frequent land sliding. In Darjeeling, before the colonial establishment (1st February, 1835), there were no usual regular roads except few narrow tracks through the dense forest. The *tarai* region was capable for the roadway communication system but the floods, and the bouncing river streams from the mountain were the natural obstacle for continuing the roadway system during the rainy season.

In the plain of North Bengal, both roadway and waterway systems were feasible. However, due to the natural obstacles, they had inverse relation with each other. The roadway was smoothly accessible during the dry season and conversely; the waterway was at the rainy season. Therefore, the seasonal fluctuation was the main

problem of the conventional transport system. Instead of the fluctuation, the waterway took a necessary role in the internal and external communication system due to some important perennial rivers in the Northern Bengal. During the rainy season, the roadway communication system would interrupt by the floods. The most striking feature of the southern part of North Bengal is *bils* or huge marshy land within the districts of Pabna, Rajshahi and Bogra. The general feature of the Pabna district is the low and flat landscape. Therefore, many of the villages would completely isolate during the rains, when the only means of reaching was by boat. In the rainy season, there was scarcely a spot which cannot be reached by water. According to O' Mally, 'It will readily be understood that these *bils* form a serious obstacle to transport by land, for roads can only be constructed across them (villages) at great expense.'¹

3.2.2. The Policy and Roadway Development :

We have already discussed how much the conventional ways of transport of the northern Bengal were nature centric. Where, the roadway traffic would interrupt by the two important factors like; landscape and climate. Before the foundation of the railway (23.8.1880), in the hilly track like Darjeeling, the condition of the roadway traffic was very poor. Before the foundation of the Company's rule in Darjeeling, the communication was extremely backward. Exceptionally, few narrow rough tracks through forests and irregular wicker bridge over the torrents existed. The ruling family of Sikkim was of Tibetan origin. Therefore, the government of Sikkim was less interested towards southward communication than the northward communication. According to the Grant memorandum of 1830, only two northerly routes existed from the plain to the hills; one was 'Nagree' pass and the other by the 'Sabbok Golah'².

Lieutenant Napier first time took the initiative to solve the intricacy of the communication. A road was constructed for years 1839 to 1848, between Siliguri to Darjeeling, which presently known as Old military road or *Pankhabari road*. The road extended from Matigara to Ghum via Kurseong and Dow Hill. However, the wheel traffic was very inconvenient due to winding way by sharp ascent. That was responsible for the high transport cost (Rs.2 per *mound* from Pankhabari to Darjeeling)³. At the same time, the price rate of rice was below rupees two to four per mound in the hills (in 1871)⁴. Due to failure of the first experiment, authority realized the necessity of the new cart road towards Darjeeling. In that circumstance, in 1860, the government started construction of a cart road, and the road opened for traffic in 1864, which finally completed in 1869. Presently, this is known as Hill Cart Road, which is even today taking vital role to communicate between Darjeeling and Siliguri. At the same time, to improve the plain's communication another road was opened from Karagola Ghat on the Ganges opposite of Shebganj to Siliguri with the cost of Rs.14,

68,000, of a road 126 miles long, which known as the Ganges Darjeeling Road⁵. The road was vital to communicate with Calcutta and the northern districts of Bengal.

The account of Francis Buchanan Hamilton (in 1833) significantly helps us to draw the picture of the transport condition of the northern Bengal under the Company's rule. In plain, even in the first quarter of the 19th century, the roadway transport system neglected highly for continuing the internal and external trade. There was no such regular carrier. The roadway communication neglected equally with those intended for trade between the capital of the districts and the *thanas*, and chief places of the subordinate divisions. The landholders chiefly interested in the repair of the roads, because their communication from the capital was very necessary and frequent. The general roads for public transportation between the capital of the district and those of the adjacent jurisdictions were in a tolerable state⁶.

The Annual Report on the Administration of the Bengal Presidency for 1860-61 laid down in clear terms the policy of the Government towards the development of roads. 'In a great measure during the past year from the pressing necessity of providing military accommodation for troops, and has been able to give practical attention to the formation of a system of Imperial Roads throughout the provinces. The leading feature of this scheme has been to provide one main line of road, at least, in each district, which shall pass through the principal town or station and be continuous, that is in connection with the main lines of the next district; so that district may be connected with district and roads be of general public advantage, as well as of local benefit. At the same time the communications with adjacent provinces not under the jurisdiction of the Bengal Government have been maintained, and the Imperial Lines have been designed to afford the means of easy communication between the chief centers of population, and to secure to every part of the country a proper outlet for its produce and ready access to the great channels or thoroughfares of commerce. The existing Trunk Roads and their branches form the first installment of the projected system.'⁷

The Annual Administrative Report on the year 1900-1901, clearly shows the picture of colonial transport policy, which indicates the development of the roadways in the North Bengal (See the Table No. 3.2.1). It is remarkable, before 1911, Darjeeling was the summer capital of the British Government like Simla, and it was also commercially important due to tea industry. Therefore, the development of communication with Darjeeling was vital according to administrative and economic point of view. The table below indicates the growth of metal and un-metal roads in the northern Bengal which maintained and constructed by the Public Work Department and the local authority (See the Table No. 3.2.1). Out of the 284.625 miles metal roads

of the northern Bengal excluding the district Malda and Coochbehar state, 143 miles roads were under the Darjeeling district. Here it is notable, though the construction and maintaining charges of the roads in the hilly truck were high, but instead of the physical and financial obstacle, the authority put importance on the Darjeeling district, whereas at Bogra districts even up to the year 1901, there was no metal road for the public use. Therefore, the roadway transport policy of the authority is clear, and it was according to colonial commercial and political interest like railways. Our analysis from the same table indicates the poor condition of the conventional mode which continued even at the beginning of the 20th Century. Only, 284.625 miles metal roads were very short according to need. Yes, the table as well specifies 5025.75 miles un-metal roads. The PWD and local authority would maintain those roads. In quantity, un-metal roads are nearly; 17th times double from the metal roads and were the main dependable way of the massive population of North Bengal.

Table No. 3.2.1

Statement Showing the Length of Road Communication by the Local Authorities and PWD in North Bengal during the Year 1900-1901

(Excluding the district Malda and Coochbehar State and the roads within Municipal Limits maintained by the Municipal Fund.)

Name of the District	Metal Road Maintained by PWD	Un-metal Road Maintained by PWD	Metal Road Maintained by Local Authority	Un-metal Road Maintained by Local Authority	Total Metal	Total Un-metal
	miles	Miles	Miles	Miles	Miles	Miles
Dinajpur	0	0	20.5	1026.375	20.5	1026.375
Rajshahi	0	0	63.75	473.5	63.75	473.5
Rangpur	0	28	16.25	1373.875	16.25	1401.875
Bogra	0	0	0	338.75	0	338.75
Pabna	0	0	5.25	579	5.25	579
Darjeeling	143	194	0	351.375	143	545.375
Jalpaiguri	8.5	0	27.375	660.875	35.875	660.875
N.B. Total	151.5	222	133.125	4803.75	284.625	5025.75
Bengal Total	1190.625	468.5	3415.75	34312.125	4606.375	34780.625

Source: *Annual Administration Reports for Roads and Buildings, Irrigation and Railways for the Year 1900-01, Public Works Department, Government of Bengal. Calcutta, Appendix .B.*

The above table also indicates, in respect of Bengal only 6.17% metal and 14.44% un-metal road belong to North Bengal excluding the district Malda and Cochbehar state. If we deduct the total metal roads within the Darjeeling district, subsequently the development of the metal road in North Bengal was very negligible.

The situation at the Coochbehar state was no longer different from the other districts of the northern Bengal. Though, the state established the Communication Improvement Fund in 1893, which received regularly a grant of Rs, 50,000 for every year for the maintenance and development the roads⁸. The Annual Administration Report of the Coochbehar State, 1899-1900 indicates the PWD would maintain total 363.75 miles roads, out of these only 5.25 miles were metal roads. It is also significant that among them, 164.5 miles roads were neither metal nor embanked and bridged; therefore, their convenience was uncertain and obviously nature centric⁹(See the Table 3.2.2).

Table No. 3.2.2
Condition of the Roadway Traffic in the Year 1931-32
(Length in Mile)

Year	District	Road Maintained by PWD		Road Maintained by Local Authority		Total Length In Mile	
		Metal	Un Metal	Metal	Un-Metal	Metal	Un-Metal
1931-32	Dinajpur	14.6		35.5	1655	50.1	1655
	Jalpaiguri	132.5	56	100.375	889	232.875	945
	Rangpur			20	5236	20	5236
	Malda			36.75	1134	36.75	1134
	Darjeeling	222.33	131	16.5	324	238.83	455
Total	N.B.	369.43	187	209.125	9238	578.555	9425
Total	All Bengal	908	720	2612	46599	3520	47319

Source: *Annual Administrative Reports for Establishment, Buildings, Railways and Communications, for the year 1931-32, Public Works Department of Bengal, Calcutta, p.12.*

The *Annual Administrative Reports for Establishment, Buildings, Railways and Communications* in the year 1931-32 by Public Works Department of Bengal, indicates that the lengths of the metal roads considerably increased in the districts of Jalpaiguri and Darjeeling. At Jalpaiguri, within 32 years, between the years 1901 to 1932, 197-mile metal roads were constructed under the PWD and local authorities. At Darjeeling district, it was 95.83 mile. The condition of metal roads was very poor for the other districts of North Bengal. Similarly, roadway planning was done with the sole purpose of serving the interests of the plantation estates. Therefore, the huge development of the roadway communication in Jalpaiguri and Darjeeling was a part colonial interest and policy. It is for this reason that all roads maintained by PWD were constructed for the interest of the plantation estates. Even the roads under the control of the District Board and local authority as well extended to serve the purpose of the tea estates. Again, not only special grants were sanctioned by

the government for the improvements of roads serving the tea estates but even the funds of the District Board were normally channelized to the extension and repair of roads in the adjoining areas of the plantation estates¹⁰. At the same time, in 1923, there were only 34 miles of metal roads in the Pabna district and 691 miles of un-metal roads¹¹. Therefore, we assume how much the subject's interest neglected. The roadway-transport conditions of the southern districts of North Bengal remained backward even in the second decade of the 20th century.

3.2.3. Crisis of the roadway traffic:

However, undesirably, the roadway transport basically the un-metal roads were unable to use in the rainy season, which usually continued annually for the three to four months. The statistics of the rain fall in Coochbehar state during the period 1872 to 1875 indicate that the average rainy days were 114 yearly, and the mean rainfall of the same is 123.6 inches¹² (see Table No.3.1.4). If we assume these are the standard statics for the northern Bengal, then we can easily realize the condition of the roadway traffic. Few district like; Darjeeling and Japaiguri are comparatively high in respect of the rainfall and rainy day. The southern districts of North Bengal receive comparatively low rainfall, but the soil conditions of these districts are favorable to accommodate water for the long time. At the same time, the huge rainfall in the Himalayan and *tarai* region often caused the flood in the lower districts of the northern Bengal. Therefore, the condition of the roadway traffic for the lower districts was miserable and impossible during rainy season.

Another serious crisis of the roadway traffic was the problem of maintenance and repairing throughout the year. It was due to natural disaster like a flood; the repairing cost was cooperatively high. In the years 1899 and 1900, at Darjeeling district a huge natural disaster occurred by the storm of September 1899 and the rains of 1900. The restoration of the roads, drainage and protective works at Darjeeling was necessary owing to the storm disaster of September 1899. The government took a necessary step to recover the communication system, and the capital outlay was 1, 30, 827 rupees. The total sum of Rs. 3, 10, 725 was expended by the Special Repairs Division, out of this total Rs. 1, 77, 658 was expended on roads alone, and the balance was spent on protective works and drains¹³. In the hilly track, the maintaining the roadway traffic was too difficult during the rainy season. Annual Administration Report of the Coochbehar state indicates that: "The difficulty of keeping our roads in decent repair during the rains, when the ground is wet and slushy, is greatly enhanced by the impossibility of procuring sufficient labour. All the labour employed by the Public Works Departments, as you are aware, imported, and the coolies return before the rains to their homes, with a very few exceptions."¹⁴

3.2.4. Technology and Its Benefit:

In 1838, *A Guide to Darjeeling* published where it mentioned that the journey from Calcutta to the foot hill of Darjeeling was for 98 hours¹⁵. According to the Sir Hooker's description, the journey from Calcutta to Darjeeling took five or six days, that was full with discomfort and expensive. He explained that the carrying cost of the cart from Karagola Ghat Ganges, to the foothills of the Darjeeling was Rs.240¹⁶. Even so, a trip in 1873, from Calcutta to Darjeeling was an eight-day suffering for the artist Edward Lear, whose cart broke down whose coolies fled¹⁷.

The condition entirely changed after the foundation of the railways in the North Bengal. In the beginning of the 20th Century, A. Claude Campbell narrates his feeling about the journey from Calcutta to Darjeeling: "Although somewhat tiring the journey from Calcutta is interesting. Leaving the Sealdah terminus of the EBSR in the afternoon, the Ganges River which is reached about eight o'clock in the evening it crossed by ferry in about an hour. A good dinner is served on board. The night is spent in a meter gauge train, and Siliguri, in the Terai at the foot of the hills reached by six in the morning. Passengers then change into a tiny mountain train, the speed of which is about ten or twelve miles an hour. This interesting little railway undoubtedly ranks one of the marvels of engineering works in the world. Darjeeling is reached about 1p.m.¹⁸".

Therefore, we may articulate that the journey of Campbell was far better than Sir Hooker and Edward Lear in respect of time, cost and comfort. According to Campbell's description, the maximum time of journey from Calcutta to Darjeeling was roughly one day and few hours, before the foundation of the railway it took five or six days, which approximately five or six times double. Before 1915, there was no bridge over the Ganges or *Padma*, therefore, the line started at a point, south of *Paksey* (Paksi) station on the left bank of the Ganges, and the EBR steamer service continued between two *Ghats*. In 1915, the bridge was completed over the Ganges (Padma), which was over one mile (5900 feet). At that time, it was one of the longest bridges in the world. Its construction was a great feat of engineering. It was further titled as *Hardinge Bridge* according to the name of Lord Hardinge. The foundation of the Hardinge Bridge also reduced the journey time and embarrassment of the ferry service in about an hour to cross the river Ganges. 'The Ganges was bridged in 1915, and the broad gauge system gradually extended northward, now traveller the can reach Siliguri with a night journey of nine hours and be in Darjeeling within 13 or 14 hours of living Calcutta¹⁹.'

3.2.5. Comparative Study on Transport Cost between Roadway and Railway:

Hypothetically, we have assumed that, comparatively, the railways introduced a cheaper mode of transport system, which reduced the transport cost compare to conventional system like roadway. To examine the above premise, we have to compare the

transport cost of the railway and roadway traffic. We have already discussed the condition of the roadway traffic in the 19th century and at the beginning of the 20th century of North Bengal. In fact, the competition between railway and roadway means the struggle between bullock carts against the new transport technology like, railways. In respect of capability and convenient, it was an uneven competition, which continued up to the introduction of the modern roadway transport system which facilitated by the motor vehicle with metal roads. In our study period (1870-1921), due to lack of the modern roadway transport system, we have studied the transport cost between railways and bullock carts

Table No. 3.2.3

Road Transport Cost in North Bengal by the Bullock Cart

Sl No	District	Year	Usual Load In Mounds	Approx distance	Cost	Pies/Mounds/K.M.
				In K.M.(12mile)	In Pies	
1	Dinajpur	1833	10	19.31208	37.5	0.194179
2	Rangpur	1866	10	19.31208	50	0.258905
3	Bogra	1866	10	19.31208	50	0.258905
4	Malda	1866	10	19.31208	75	0.388358
5	Dinajpur	1866	10	19.31208	75	0.388358

Source: For **Sl.No.1**, Dr. Francis Buchanan (Hamilton), *A Geographical and Historical Description of the District, or Zila of Dinajpur in the Province, or Soubah of Bengal, the Baptist Mission Press, Calcutta, p.328*. For **Sl. No. 2-5**, *Bengal Revenue Deptt. Prosgs., April 1866 No.35. (Cited in Mukul Mukherjee :Railways and Their Impact on Bengal's Economy, 1870-1920, Railways in Modern India ,Ed by Ian J. Kerr, Oxford University Press, New Delhi, 2001,p.131.)*

The above table indicates the capability and cost of the Bullock Cart. In the first quarter of the 19th century, at the town of Dinajpur, the carts would hire for six *annas* a day, and the cart had a capability of maximum 10 mounds loads for a 12 miles distance for a day²⁰. In 1866, the transport cost for the Rangpur and Bogra district was 50 pies for 10 mounds loads with 12-mile distance. It was comparatively high at Malda and Dinajpur districts and for the same distance and load, it took 75 pies. In the hilly tuck of the Darjeeling district, which was impracticable for wheeled traffic even up to 1860, there was no cart road as a result the transport cost was heavy from the other districts of North Bengal, 5.16 pies per mound kilometer²¹. Therefore, the regional fluctuation of the

transport cost might be a negative factor for the price convergence between the districts of North Bengal. The table also indicates the maximum transport capability by a bullock cart (10 mounds) which unparalleled with the load capacity by a train.

Table No. 3.2.4

Transport Cost of the East Indian Railway for Paddy and Rice

Sl.No.	Year	From	To	Approx distance(in K.M.)	In Pies	Pies/Mounds/K M
1	30th June 1891	Howrah	Sahebganj	353	26.75	0.075779
2	30th June 1892	Howrah	Sahebganj	353	22.75	0.064448
3	31st March 1894	Ambala Cantonment	Brurdwan	1566	90.5	0.057791
4	31st March 1895	Ambala Cantonment	Brurdwan	1566	78	0.049808
5	30th June 1898	Howrah	Benaras	680	50.75	0.074632
6	30th June 1899	Howrah	Benaras	680	53.75	0.079044

Source: For Sl. No. 1 & 2 : *Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 30th June 1892, Bengal Secretariat Press, Calcutta ,p.ii, For Sl. No.3 and 4 : Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 31st March, 1895, Bengal Secretariat Press, Calcutta p.v, For Sl. No.5 and 6 : Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 30th June, Bengal Secretariat Press, Calcutta 1899.p.iv*

The transport cost selected by the railways varied according to products, quantity and distance. Railways had different freight charge for every product. Therefore, we have only selected the paddy and rice, which is the common essential product for the people of North Bengal, to find out the trend of the transport cost. For the years 1894 and 1895, the

rate of the paddy or rice was selected over 300 mounds load²². In the years 1898 and 1899, the rate was selected for the same products over the 370 mounds load²³.

Table No. 3.2.5

Comparative Study Between Roadway and Railway Transport Cost in Pies per Mounds per K.M.

By the Railway			By the Bullock Cart			Value in Pies	Percentage Of the increase
Area under	Year	Pies/Mounds/ K.M	Year	Area under	Pies/Mounds/ K.M.		
EIR	30th June 1891	0.075779	1833	Dinajpur	0.194179		
EIR	30th June 1892	0.064448	1866	Rangpur	0.258905		
EIR	31st March 1894	0.057791	1866	Bogra	0.258905		
EIR	31st March 1895	0.049808	1866	Malda	0.388358		
EIR	30th June 1898	0.074632	1866	Dinajpur	0.388358		
EIR	30th June 1899	0.079044					
Average		0.066917	1833-1866		0.297741		
Average only in the year 1866					0.318453,		
Trend of the rise of transport cost by the Bullock cart (Dinajpur 1866-1833,) in 34 years						0.194179	100%
Trend of the rise of transport cost by the Railway (the Year 1899-1891) in 9 years						0.003265	4.130707%

Source: For the Bullock Cart Fare: 1. Dr. Francis Buchanan (Hamilton), *A Geographical and Historical Description of the District, or Zila of Dinajpur in the Province, or Soubah of Bengal, the Baptist Mission Press, Calcutta, p.328.* 2. Bengal Revenue Department Proceedings, April 1866 No.35. (Cited in Mukul Mukherjee :*Railways and Their Impact on Bengal's Economy, 1870-1920, Railways in Modern India ,Ed by Ian J. Kerr, Oxford University Press, New Delhi, 2001,p.131.*)

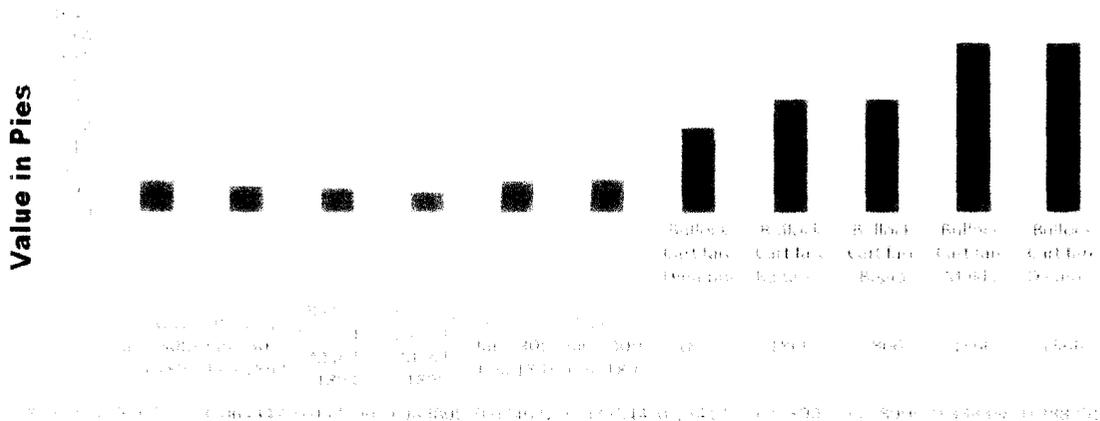
For the Railway Fare : 1.*Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 30th June 1892, Bengal Secretariat Press, Calcutta ,p.ii,* 2. : *Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 31st March, 1895, Bengal Secretariat Press, Calcutta ,p.v,* 3. : *Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 30th June,1899. Bengal Secretariat Press, Calcutta ,p.iv*

Our findings clearly signify that the fare of roadway was more than four times double from the fare selected by the Eastern Indian Railway (EIR). The fare of the railways in the plain of North Bengal was same but the maximum fare for goods and passengers in the Kishangang Extension of the DHR was double in respect of the EIR²⁴. According to the agreement, between the State and the Darjeeling Himalayan Railway Company, the fare pattern for the hill stations was different in respect to the other's railways. However, the findings are sufficient to establish the argument that the technology like the railway remarkably reduced the transport cost in respect of the conventional roadway traffic. In the year 1866, the average transport cost by the Bullock cart was 0.318 pies per mound per kilometer in North Bengal. The average transport cost by the railways, in the years 1891 to 1899, were only 0.066 pies per mound per kilometer. According to the Table No. 3.2.5, it is significant that in the years 1894 and 1895, the transport cost was remarkably reduced by the railway companies to consolidate their transport market against each other and waterway. Significantly, the railway transport-cost increased only 0.003265 pies (per mound per kilometer) within nine years (1891-99), that indicates 0.45% hike yearly. The growth rate of the transport cost by bullock cart was extremely high. At Dinajpur district within 34 years the transport cost turned into double, which increased @2.94% yearly. If we calculate the hike rate, in the year 1899, the actual difference of the transport cost between Bullock cart and the railways is $(0.576826 - 0.079044) = 0.497782$ pies, which more than seven times double from the railway fare.

The bullock cart transport became remarkably costlier for longer distance trade and journey. 'When a cart is engaged for a single journey within 10 miles of the starting point, it can be had at the rate of 12 as. but if required to be engaged for than one day, the owner will charge one rupee for subsequent days²⁵.' Therefore, for the longer distance, per mound per kilometer cost will be significantly high from our above findings, and it was another disadvantage of the roadway traffic relatively from the railways. Table No. 3.2.6 clearly indicates the comparative difference to the transport cost, but actual difference between both the systems would be more because we don't select same year for both mediums.

Table No. 3.2.6

Comparative Study of the Transport Cost Between Railway and Roadway in Pies per Mounds per K.M.



Source: The chart Calculated according to Table No. 3.2.5

3.2.6. Comparative Study on Transport Cost between Roadway, Waterway and Railway:

Geographically, different rivers intersect the northern region Bengal, and few rivers were also available in the dry season. Even at the end of 19th century, the travelling by the land was nearly impossible during the rainy season at the same time the navigation confined within very narrow limits in the dry season. In the dry season, very little would export and import, during same produces of the country used to collect in the ware-houses, those were situated near the river bank. According to the available source, in the first quarter of the 19th century the conventional transport system had few crucial problems. The imports would continue in the rainy season, and during the dry weather, some products used to distribute from the principle marts to the various market places²⁶. Even in the dry season, in Dinajpur district, the Mahananda, Attreyi, and Korotoya were navigable for the boats of 500 mounds burden. ‘ For rice, the great article of export, this too expansive a mode of conveyance, and indeed of little consequence, as the merchants would general avoid, taking it to Calcutta or Murshedabad market, until the rice produced in the vicinity of these cities is consumed, which is not until after the commencement of the rainy season; and besides the Bhagiroti, which is the channel of conveyance between this Murshedabad and Calcutta, is not navigable in the dry season²⁷. ‘Very few of the boats employed in trade belong to the district, because during the dry season, they could have no employment

except at a great distance from the inspection of the owner²⁸. Some merchants ' in general can annually take two loads of rice to Calcutta, and bring back two loads of salt; but the practice does not same judicious²⁹. The Ganges (or Padma) and the Brahmaputra (or Jamuna) ,both these two great waterways of India flow accordingly to the direction of south-western and eastern part of North Bengal (Before partition) . Both these two rivers were navigable throughout the year for the larger size native boat, and also for steamer. The Baral and the Harasagar were the two important rivers of the Pabna district both were navigable throughout the year for native boats of more than 100 mounds³⁰.

We have studied comparative freight structure of rail and river- borne traffic, but it is extremely difficult to calculate the average river transport cost as per mound-mile. Mukul Mukherjee (2001) in his findings tried to calculate the transport cost per mound-mile and concluded that "there might not have been conspicuous disparity between the two modes of transport so far as nominal (i.e. mound mile) freightage is concerned, the marginal advantage in most cases would appear to have rested with the railways³¹". The study is highly problematic due to the judgment of the exact distance between one place to another, according to zigzag course of the rivers. The sources usually indicate the transport cost between two places; therefore, it is difficult to calculate the cost per mound- kilometer. In the dry season, a boat from the town from *Nalagola*, the port of Dinajpur to *Bhogowangola*, the port of Murshedabad continued river trade @ Rs.3.5 to 4.5 for the 100 mounds weight. A large boat took Rs.13 for the carrying 100 mounds rice for the distance from *Damdama*, Dinajpur to Calcutta by the river *Punarbhoba*. In respect of the Bengal, the charges might be comparatively low.

'The report on the Agricultural Statistics of Jessore, 1873' indicates that the river transport cost was 0.18 pie per mound per kilometer, whereas the maximum cost from the Dinajpur districts was 0.027 pie per mound per kilometer. To find out the cost per mound – kilometer, we have assumed the distance between two places according to the roadway distance in a kilometer. The exact distance between two places according to the river direction would be more than roadway, but measuring the river transport cost according to zigzag river course was too difficult. Therefore, the two arrangements were available in the northern Bengal: cost in rupee per 100 mounds (or any quantity) between particular trade centers and by hire, the boat in respect of daily cost³². The table below (Table No.3.2.7) signifies the water transport cost in pie per mound per kilometer for the year 1833, from Dinajpur district to other parts of Bengal. It is remarkable; the cost during the rainy season was relatively low from the dry season.

Table No. 3.2.7

Maximum and Minimum River Transport Cost in North Bengal Pies Per Mound Per Kilometer -1833

Distance				Rs./100mds		Pies/mounds/km	
Year	From	To	K.M.	Min.	Max.	Min .Pies	Max. Pies
1833	Nalagola, Dinajpur	Bhagwangola, Murshedabad	173	3.4	4.5	0.019653	0.026012
1833	Potiram ,Dinajpur	Calcutta	480		13		0.027083
1833	Potiram(Rainy Season) ,Dinajpur	Calcutta	480	10		0.020833	
1833	Damdama ,Dinajpur	Calcutta	439		13		0.029613

Source: For the Year 1833, Dr. Francis Buchanan (Hamilton), *A Geographical and Historical Description of the District, or Zila of Dinajpur in the Province, or Soubah of Bengal*, the Baptist Mission Press, Calcutta, p.327.

Table No. 3.2.8

Comparative Study of the Transport Cost Between Railway, Waterway and Roadway

From	To	Distance	Transport Cost in Rupee Per 100 Mounds						
			Waterway Cost In 1833		The transport cost calculated for the year 1891				
			Min.	Max.	Railway cost on 30,June 1891	Calculated according to the hike of the Roadway transport cost in Dinajpur district between 1833-1866.			
						Roadway	Waterway (Minimum)	Waterway (Maximum)	
Nalagola	Bhagwangola	173km.	3.4	4.5	13.10977	114.6113	11.6	15.35294	
Potiram	Calcutta	480km		13	36.37394	423.995		44.35294	
Potiram (Rainy Season)	Calcutta	480km	10		36.37394	423.995	34.11765		
Damdama	Calcutta	439km		13	33.267	581.6689		44.35294	

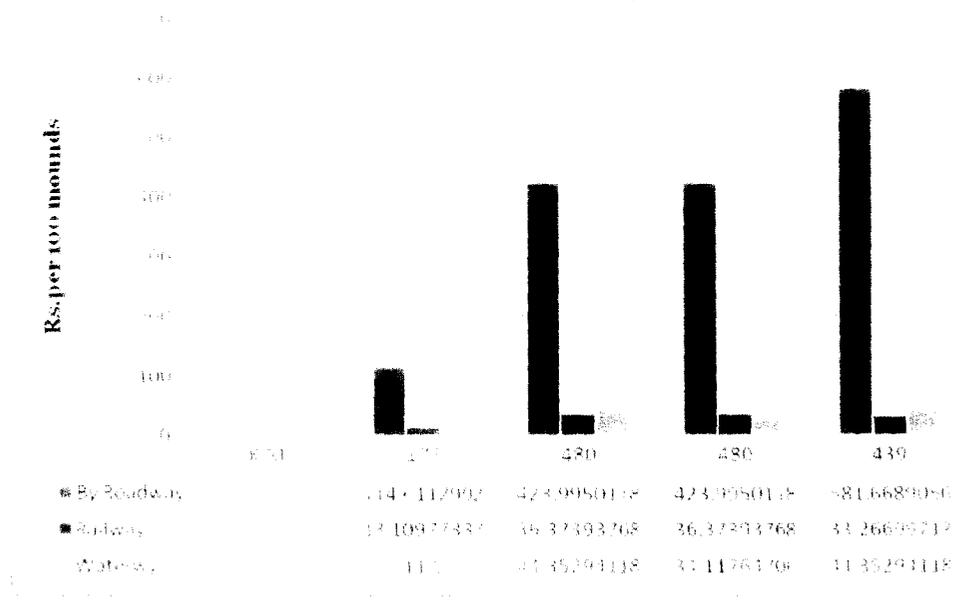
Source: Calculated According to Table No.3.2.5 and 3.2.7

We know the river transport cost between the places within the Dinajpur district and other trade centers of Bengal, but we don't have any data for the exact distance between the same places. Therefore, at first we find out the roadway distance between the mentioned places in the Table No.3.2.8. We have already calculated the cost of the roadway and railway in the Table No.3.2.5, in rupee per mound-kilometer. We have calculated the hike trend of the roadway transport cost from the year1833 to year1866 in the Table No.3.2.5 to find out the proximity of transport cost. In the same way, we find out the approximate hike of the river and road transport cost in 1891, that calculated according to annual hike rate as the roadway transport cost between years 1833 to 1866, in the Dinajpur district. After that we compare the cost of the conventional mode with the cost to the railway on 30th June 1891. In respect of the minimum and maximum, we have selected the minimum cost of the river transport to compare with others two ways of

communication. The findings point out the high probability of the proximity between the railway and river transport cost in the last decade of the 19th century. The Table No.3.2.9, it signifies that for a while, the cost of river borne trade was lower than the railways. The most important finding is that, the bullock cart gradually lost their importance due to maximum transport cost. The acceptance of other two modes of transportation systems was better than the bullock cart. Therefore, the probability of the internal and external merchandise traffic was very little by the bullock cart, but for the seasonal (due to lack of water communication in the dry season), shorter and interior distance the acceptability of the bullock cart not diluted

Table No. 3.2.9

Comparative transport cost calculated for the selected distances in the year 1891



Source: Calculated According to Table No 3 2 8

Our statistical analysis and its graphical interpretation signify that why the river transport was significant up to the middle of the 20th century in the different places of the northern Bengal. M. O. Carter (1938) as well observed the importance of waterway in North Bengal still up to fourth decade of the 20th century. "Information is not available to show what is the position after the opening of the new line (railway), but it is possible that the main export in rice and paddy by steamer up to the Ganges to Bihar has been largely

unaffected, while that of jute and other commodities to other parts of Bengal has been partially captured by the railway³³. The graph strongly indicates the chief reason behind the gradual unacceptability of the bullock cart as a carrier for the internal and external merchandise traffic. The graph is as well signifying two identical bar of the 480 K.M., where railway and roadway cost is same but the cost of the river-borne traffic was different due to the seasonal variation. The first one is higher than the second because of a dry season.

We may obviously accept that the railway faced strong competition, mainly in the northern part of Bengal due to high facility of the river-borne traffic with the cheapest transport cost. July 1864, the Eastern Bengal Railway made a heavy reduction for the conveyance of rice, gram, sugar, gunny bags, salt, etc³⁴. We have already studied the railway transport cost per mound- kilometer in the Table No.3.2.4, which signifies that in the years 30th June 1892, 31st March 1894 and 31st March 1895, the Eastern Indian Railway constantly reduced their transport cost for the gram, pulses and rice³⁵. No doubt, the reduction of railway fare mainly was given to attract the products which were successfully transporting by the river. S.C. Ghosh also remarks that the policy of the deduction of the railway fare was influenced more or less by the river competition³⁶.

3.2.7. Factors Behind Rise of Railway as a Superior Carrier:

In fact, instead of the proximity between the railway and waterway transport cost, in the final count, the railways dominantly emerged as the superior carrier in relation to the traditional alternatives due to various important factors.

If we calculate the actual transport facilities of the railways, which are far better than the river traffic. All the conventional modes of the transport systems in North Bengal were seasonal and depended on nature; therefore, the seasonal fluctuation was a very important drawback for the roadway and river-borne traffic. The Table No.3.2.10 indicates the notable seasonal fluctuation by the river-borne traffic in North Bengal, even in the bigger rivers. The Nadia Rivers usually were the main channels of the river-borne trade of Calcutta, and the rivers as well were serving the northern districts of Bengal. The approximate length of rivers comprised in the Nadia Rivers systems are 470.25 miles³⁷. Due to seasonal variation, the crops used to store in ware-houses on the river banks and shipped when the rivers would rise in the rains, to large marts³⁸. Waiting for rain was the factor, so that the trade usually hampered and was a high probability of damage. The table clearly mentions the river-borne traffic for the internal and external trade highly affected during the dry season. In spite of proximity of the transport cost, technologically railway has unique transportation capability throughout the year. According to the account of Captain Lewin, Coochbehar state had six navigable rivers throughout the year. There were twenty more minor streams, which were unable to use for boat traffic except in the rainy season³⁹. The territory lies between two

great rivers, the Brahmaputra and Tista, and the cross roads linked the main starting place for such navigation⁴⁰. So the river traffic failed to serve the purpose of public transportation within the state, but took an important role in export and import trade before the foundation of the Railway with Bengal, Burma and Assam. After the foundation of railway, the CSR with NBSR, EBSR and Assam Railway took significant role to carry the goods throughout the year⁴¹. The navigability of the six big river's (Tista, Singimari, Torsha, Dharla, Kaljani, Raidhak & Godadhar) of the Coochbehar state was hundred mounds or four ton throughout the year. Therefore, the rivers failed to serve the actual need of the trade and commerce⁴².

Table No. 3.2.10

Seasonal Fluctuation in the Navigability of the Rivers Serving North Bengal

River	District	Length (Mile)	Open (no. of month)	Quantity by boat (in mound)	
				Dry season	Rainy season
Attrai	Rajshahi	58	8	100	5000
Nagore	Dinajpur	68	12	40	1000
Kulik	Dinajpur	50	4	500	1000
Bhagirathi	Dinajpur	146	12	300	2000
Jellinghee	Nadia	114	6	100	2000
Mathabhanga	Nadia	116	6	100	2000

Source: *Government of Bengal, Statement of Navigable Rivers, Canals and Khals in Bengal, Calcutta, 1866, Cited in Mukherjee, Op,cit.p.134.*

In respect to the time and capability, the railway is incomparable with other conventional modes. The railway had a massive loading capacity, whereas the capability of the conventional modes was inadequate and nature centric. Within few decades, railway extended a unique network all over India; therefore, the transporting capability from one place to another, even for the longer distance, was undoubtedly more than the river-borne traffic. Obviously, railway destructed the importance of the river-traffic⁴³. In the report for April 1891, the Traffic Manager, East Indian Railway, stated that "by the opening of the Bengal-Nagpore Railway, we have obtained access to stations in the Central Provinces

previously supplied via Bombay with gunny exported by sea from Calcutta⁴⁴ . Due to further extension of the railways, the agriculture products of the northern Bengal were successfully exported in the different part of India, which was unimaginable by the river-borne traffic. Exporting the agricultural product like jute by the water communication via Calcutta to the Central Province was the factor of few months' journeys with the high probability of damage. However, the railways took only few days in respect of few months by the river- borne trade with hazard less and more secure and more safety journeys. Before the foundation of railway, the only means of communication between Rangpur and Calcutta was by boat. In 1781, the upward journey by *Budgerow* would take fifty two and half days, while the downward journey would take twenty days. Walter Hamilton in 1820, observed that although Rangpur "is 260 travelling miles from Calcutta and the road indifferent and intersected by an amazing number of rivers and water- courses, yet in a palanquin the journey is with ease gone over in four days"⁴⁵. After the foundation of the NBSR, the same distance between Rangpur and Calcutta was only for twelve hours⁴⁶. The foundation of Railway in North Bengal reduced and solved the problem of conventional communication systems. It helped to regularize the communication system instead of climate centric, seasonal, irregular communication system. Railway, moreover, reduced the travelling period where the bullock carts would cover a maximum 12 miles in a day⁴⁷. Instead of hard journey, Railway introduced comfort and smooth journey, which inspired the people of the state, as far as possible to avoid the conventional system.

¹ . L.S.S. O'Malley: Bengal District Gazetteers ,Pabna, The Bengal Secretariat Book Depot, Calcutta, 1923,p.4

² . Das, A.J. *Darjeeling, Bengal District Gazetteers*, Bengal Government Press, Calcutta 1947, P. 179.

³ . Das, A.J, Op.cit, p.179.

⁴ . O,Malley,L.S.S Op.cit. p.112

⁵ . Das, A.J, Op.cit, p.180

⁶ . Dr. Francis Buchanan (Hamilton), *A Geographical and Historical Description of the District, or Zila of Dinajpur in the Province, or Soubah of Bengal*, the Baptist Mission Press,Calcutta,1833,p.328.

⁷ .Annual Report on the Administration of Bengal Presidency ,1860-61,p.58, Cited in Sunil Kumar Munsu, Op.cit p.27

⁸ . The Annual Administration Report of the 1899-90, The Coochbehar State Press, Coochbehar, p.41.

⁹ . The Annual Administration Report of the 1899-90, The Coochbehar State Press, Coochbehar, p.46.

¹⁰ . A Guha, "Planter Raj to Swaraj: Freedom Struggle and Electoral Politics in Assam", 1977, pp 30-34, also P Griffith, "The History of Indian Tea Industry", 1967, pp 647-649, Cited in Virginius Xaxa: Colonial Capitalism and Underdevelopment in North Bengal Op, cit p.166.

¹¹ . O' Malley : Bengal District Gazetteers , Pabna, Bengal Secretariat Book Depot, Calcutta,1923, pp.75 & 76.

¹² . Source: Hunter, W.W, *A Statistical Account of Bengal*, Vol. X, London, Trubner & Co, 1874, (reprinted) Delhi, D.K. Publishing House,1984 and 2009, P.442

¹³ . Annual Administration Reports for Roads and Buildings, Irrigation and Railways for the Year 1900-01, Public Works Department, Government of Bengal. Calcutta, p.2

¹⁴ . The Annual Administration Report of the 1878-79, The Coochbehar State Press, Coochbehar, p.71.

¹⁵ . Source: A guide to Darjeeling, published in 1838, Cited in Darjeeling District Gazetteers by A.J. Dash,p.179

¹⁶ . Darjeeling District Gazetteers O, Malley, L.S.S, Op.cit, p.133

¹⁷ . Edward Lear, Indian Journal, ed. Ray Murphy, London , 1953.pp.56-62.

¹⁸ .A. Claude Campbell : Glimpses of Bengal, Vol :I, Campbell and Medland, 3 and 4 , Hare Street, Calcutta, 1907. pp.277-78.

¹⁹ . Darjeeling District Gazetteers A.J Dash, Op Cit. p.180

²⁰ . Dr. Francis Buchanan (Hamilton), A Geographical and Historical Description of the District, or Zila of Dinajpur in the Province, or Soubah of Bengal, the Baptist Mission Press,Calcutta,p.328.

²¹ . Darjeeling, O'Malley, Op cit.p.132

²² . *Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 31st March, 1895*, Bengal Secretariat Press, Calcutta ,p. v.

²³ . Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 30th June,1899. Bengal Secretariat Press, Calcutta, p. iv.

²⁴ . Supplement to the History of Indian Railways (History of Defunct Railways), Government of India Ministry of Railways (Rail Board), Delhi ,1968. p.136

²⁵ .Bengal Revenue Dept. Progs., April 1866, No.29, Cited in Mukul Mukherjee :Railways and Their Impact on Bengal's Economy, 1870-1920, Railways in Modern India ,Ed by Ian J. Kerr, Oxford University Press, New Delhi, 2001,p.131

²⁶ Hamilton, Op. Cit.p.326.

²⁷ .Ibid

²⁸ .Ibid

²⁹ .Ibid

³⁰ . W.W. Hunter: Statistical Account of Bengal, Vol :IX,Op.cit.p.271

³¹ Mukul Mukherjee, Op cit p.133.

³² . Hamilton Op .cit.pp.326-27

³³ . M. O. Carte, Op cit.p.16

³⁴ . India, PWD(Rly) Prog., August 1866, Nos 30-A and 34-A, cited in Mukul Mukherjee, Op cit.p.132

³⁵ . Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 30th June 1892, p.ii,

and

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the 31st March, 1895, p.v,

³⁶ . S.C. Ghosh, Indian Railways, Op cit .p.110.

³⁷ . The Nadia Rivers system detailed below :

Bhagirathi River- 157 miles to Nadia

Bhairab –Jalangi - 144.25 mile to Nadia

Mathabhanga River-137 mile to the junction of the Hooghly River

Hooghly River- 32 miles from Nadia to Chakdaha

Total : 470.25 miles

Annual Administrative Reports for Roads and Buildings, Irrigation and Railways for the year 1900-1901, Government of Bengal, PWD, 1902. p.29

³⁸ . J. A. Vas, Eastern Bengal and Assam District Gazetteers ,Rangpur, 1911, reprinted in India 1992. Indian Publishers' Distributors , Delhi,P.95

³⁹ Hunter, W.W, Op. cit, p.334

⁴⁰ Hunter, W.W, Op. cit, p.397

⁴¹ Mukheerjee, Mukul, Op. cit, p.135

⁴² Hunter, W.W, Op. cit, p.334

⁴³ District Census hand book Malda 1961, p.vi

⁴⁴ . Report on Rail and river borne traffic,30th June 1891,p.3

⁴⁵ . J. A. Vas, Eastern Bengal and Assam District Gazetteers , Rangpur, 1911, reprinted in India 1992. Indian Publishers' Distributors , Delhi,P.95

⁴⁶ .Ibid.

⁴⁷ Bengal Revenue Department progress, April 1866,No.35 , Cited in Mukul Mukhaerjee, Op.cit.p.131

Chapter No. 3.3

Role of the Railways in the Merchandise Traffic

3.3. Role of the railways in the merchandise traffic:

According to our hypothesis, transformation of the primitive mode of the transportation system by applying the modern technology like a railway should have a notable impact on the merchandise traffic. In the previous chapter, our comparative analysis between the traditional mode and railways indicates that railway was better than any formal mode in respect of cost, time, capability, and reliability. Our findings are though in favor of the railway traffic. However, the acceptance of the railways as a superior carrier for the internal and external trade has to examine practically. The findings are necessary to study the comparative acceptance of the railways from the other conventional modes. We have already discussed; our field of the study area, North Bengal naturally facilitated by relatively better river system. Before the foundation of the railway, very little amount of articles exported or imported in the dry season because the export and import trade were basically conducted by the river in the rainy season. During the parched season, the produce from the country would collect in the ware-house, which situated near the bank of the rivers. When the rain would come, the products used to load on boats, and send to the place of its destinations. The products would import in the rainy season, and during the dry weather, the products would distribute from the principal marts to various market places¹. The Bullock cart would cover the shorter distance between the village and main mart. Accordingly, it restricted within the districts and subdivisions where the railways and river traffic was inconvenience. The findings of the previous chapter points that the inter province transportation by the Bullock cart gradually diluted, and that accelerated after the expansion of the railways. Simultaneously, the internal and external trade between the provinces of Bengal and India was continuing by the railways and waterways. Where, the role of the Bullock cart was to connect the village marts with the railway stations and river ports. Instead of all drawbacks, due to lack of sufficient metal roads and modern motor vehicle, the Bullock cart was the main way for the root-level communication system even up to the middle of the 20th century. Hence, from the beginning of the 20th century, there was no question of competition between the bullock cart with railways and river. The Bullock cart became as an alternative for both the railways and river-borne traffic, where both were unavailable. So, the Bullock cart was obligatory way of communication between village mart and principal mart for the absence of the railways and river- borne traffic in the interior region. Consequently, the necessity of the bullock cart not diluted even after the introduction of the modern way of communication like railways

3.3.1. Comparative Study between the Railways and River -borne Import Trade, 1891-1900:

To test our Hypotheses: 3.3, we have selected the comparative study between the railways and river-borne traffic on the internal and external export- import trade. The result of the previous chapter indicates that there was no possibility of the competition between the railways and Bullock cart, but the same chapter signifies the strong probability of the struggle of the river-borne traffic against the modern technology like railways. To test all the probability and hypotheses, at first we like to calculate our source, *The Return of the Rail and River-borne Trade of Bengal* for the years 1891 to 1900, to identify the role of the railways and river on the internal and external export-import trade in North Bengal. In the same source, the record of the trade of the different blocks of Bengal (including Northern Bengal) by rail with one another and with other provinces of India was prepared by the Railway audit offices from where the invoices of goods dispatched by the railways. The record of the trade carried by the river between North Bengal, and Assam was preserved by the offices of the Steamship Companies. The same source just indicates the River-borne trade between Assam and North Bengal by the river Brahmaputra; here no record kept for the steamer-borne trade between North Bengal and different block's Bengal, principally Calcutta and other provinces of India, mainly by the River Ganges and Nadia Rivers systems². Therefore, our comparative study of the railway and river-borne trade is confine between the total export-import trades by the railways vs. export- import trade only by the river Brahmaputra between Assam and North Bengal.

Table No.3.3.1
Comparative Study Between the Railway and River -borne Import Trade in
North Bengal for the years, 1891-1900.

(Quantity in Mounds: 82.2/7 lbs.)

Year	Quarter	Imported by Rail from the		Total		Total Quantity by the Rail & River	Percentage of the	
		Provinces of India	Different Blocks of Bengal	By the Rail	By the River Brahmaputra		Rail	River
1891	31st Mar.	24360	652938	677298	325914	1003212	67.51295	32.48705
	30th June	11918	831321	843239	314528	1157767	72.83322	27.16678
	30th Sep.	7913	658184	666097	201429	867526	76.78121	23.21879
	31st Dec.	24959	759390	784349	379650	1163999	67.38399	32.61601
1892	31st Mar.	33500	1182125	1215625	296546	1512171	80.38939	19.61061
	30th June	20831	1047121	1067952	279874	1347826	79.23515	20.76485
	31st Dec.	22120	692752	714872	288311	1003183	71.26038	28.73962
1893	31st Mar.	19871	668905	688776	244148	932924	73.82981	26.17019
	30th June	11788	694857	706645	234318	940963	75.09806	24.90194
	30th Sep.	16060	607909	623969	207288	831257	75.06331	24.93669
1894	31st Mar.	33906	752958	786864	226679	1013543	77.63499	22.36501
	30th June	13478	849456	862934	350083	1213017	71.13948	28.86052
	30th Sep.	15678	640871	656549	183265	839814	78.17791	21.82209
1895	31st Mar.	46712	809586	856298	234066	1090364	78.53322	21.46678
	30th June	18190	946274	964464	240864	1205328	80.01673	19.98327
	30th Sep.	16110	714900	731010	258672	989682	73.86312	26.13688
	31st Dec.	47433	907660	955093	274576	1229669	77.67074	22.32926
1896	31st Mar.	33214	1112199	1145413	312925	1458338	78.54235	21.45765
	30th June	15016	1402446	1417462	292887	1710349	82.8756	17.1244
	30th Sep.	18823	1312348	1331171	223011	1554182	85.65091	14.34909
	31st Dec.	55815	1307250	1363065	326704	1689769	80.66576	19.33424
1898	31st Mar.	90002	1040782	1130784	133502	1264286	89.44052	10.55948
	30th June	106976	1236363	1343339	83039	1426378	94.17833	5.821669

	30th Sep.	40010	840683	880693	86954	967647	91.01387	8.986128
	31st Dec.	63827	946509	1010336	201930	1212266	83.34276	16.65724
1899	30th June	82903	1093248	1176151	152047	1328198	88.55238	11.44762
	30th Sep.	91538	1162636	1254174	100885	1355059	92.55494	7.445063
	31st Dec.	86910	1316992	1403902	151544	1555446	90.2572	9.7428
1900	30th Sep.	22182	1459940	1482122	133344	1615466	91.74579	8.254213
Total		1092043	27648603	28740646	6738983	35479629		
Percentage according to Total imported By Rail and River		3.07%	77.92%	81%	19%			

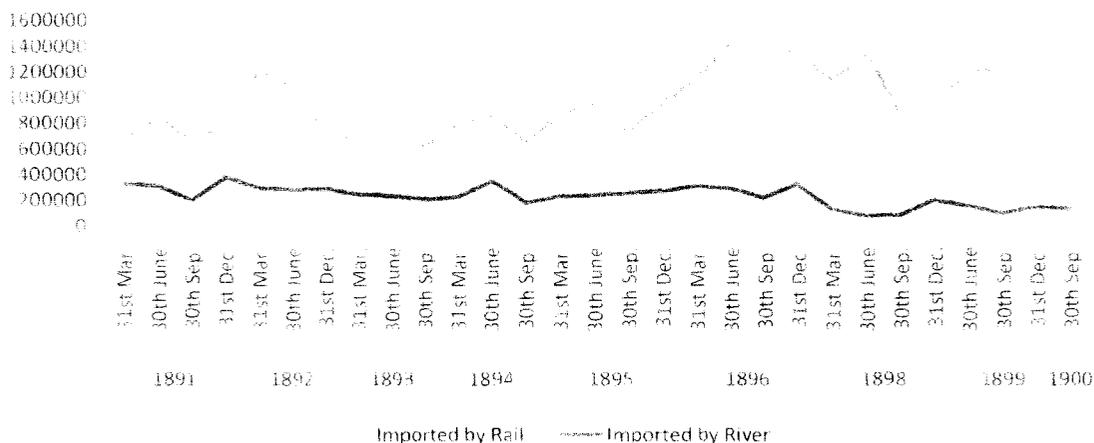
Source: *Return of the Rail and River-Borne Trade of Bengal, Statement No. II- Trade by Rail between the different Blocks of Bengal and the different Provinces of India, Statement No. III –Trade by Rail between the different blocks of Bengal, Statement B: The River-borne trade between Assam and several blocks of Bengal, for the years 1891, 1892, 1893, 1894, 1895, 1896, 1898, 1899 and 1900, and the mentioned Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta. For Details see Reference.3.*³

Table No. 3.3.1 is designating the gross import from 31st March, 1891 to 30th September, 1900. Which mainly conducted by the railways, and it was 81% from the total imported by the rail and river, whereas, the role of Brahmaputra River was only 19%. Another significant finding is that, at the initial stage import by the railway was mostly from the different blocks' Bengal basically from Calcutta. At the same time, the import from the other provinces of India by the railway was only 3.07%. The river Brahmaputra took an indispensable role to import the produces from the Assam in North Bengal between the years 1891 to 1895. The most important finding of the same table is the gradual degradation of the river-borne import while the import by the railways remarkably increased at the end of the 19th century. Though, we don't have any individual export–import report by the other prominent rivers of North Bengal, but we may assume that the railways steadily captured the market of the river-borne traffic. At the end of the 19th century, between the years 1896 to 1900, the average of the total import by the rail and river increased 32.36% from the average of the previous years (1891-95), where the growth rate of railway is 53.33%. At the same time, the average of the entire import by the river Brahmaputra remarkably decreased (-31.39%) from the average of the preceding years. Therefore, the finding is clear, at the end of the 19th century when the railway-import trade increased 53.33% conversely the import by the Brahmaputra river notably declined at the rate of -31.39%. The graphical representation designates (Table No. 3.3.2) the same argument and the import by the river

Brahmaputra extremely reduced when the total import by railway and river was comparatively increasing. According to the findings of the previous chapter, there was close proximity between the railways and river transport cost but in the final count, the railways dominantly emerged as the superior carrier. The findings of the above discussion are also solidifying the same argument.

Table No. 3.3.2

Comparative Role of the Railway and River on the Import Trade in North Bengal (1891- 1900)



Source: *Return of the Rail and River-Borne Trade of Bengal, Statement No. II-Trade by Rail between the different Blocks of Bengal and the different Provinces of India, Statement No. III -Trade by Rail between the different blocks of Bengal, Statement B: The River-borne trade between Assam and several blocks of Bengal, for the years 1891, 1892, 1893, 1894, 1895, 1896, 1898, 1899 and 1900, and the mentioned Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta. (For Detail see Reference No.3 and Table No.3.2.1)*

3.3.2. Comparative Study between the Railway and River -borne Export Trade, 1891-1900:

In the export trade, the role of the river Brahmaputra was very nominal. Table no. 3.3.3 specifies the average contribution of the railway on the total export from North Bengal was 94.70%, where the role of the river is only 5.29%. The result also indicates that, at the initial stage, the products of North Bengal basically exported to the different blocks of Bengal, mainly to Calcutta for the internal and international demand. Export from North Bengal to the other provinces of India was very insignificant (0.89%) up to the last decade of the 19th century. The export-import trade of North Bengal was basically Calcutta orient. Here the data are available for the railway traffic, but we don't get any data for the river borne trade with Calcutta and other province of India and Bengal. Therefore, the comparative study exactly indicates the export between the railways and River Brahmaputra.

Table No. 3.3.3

Comparative Study Between the Railway and River -borne Export Trade in North Bengal for the years, 1891-1900.

(Quantity in Mounds: 82.2/7 lbs.)

Year	Quarter	Exported by the Rail to the		Total		Total Quantity by the Rail & River	Percentage	
		Provinces of India	Different Blocks of Bengal	Rail	By the River Brahmaputra		Rail	River
1891	31st Mar.	20980	2004588	2025568	95015	2120583	95.51939	4.480607
	30th June	18199	1376781	1394980	143993	1538973	90.64357	9.356434
	30th Sep.	2148	1592573	1594721	127106	1721827	92.61796	7.382042
	31st Dec.	16830	2273603	2290433	84368	2374801	96.44737	3.552635
1892	31st Mar.	10777	684334	695111	137934	833045	83.44219	16.55781
	30th June	11910	548294	560204	154415	714619	78.39198	21.60802
	31st Dec.	16669	2486220	2502889	104180	2607069	96.00394	3.996058
1893	31st Mar.	20317	1367520	1387837	133797	1521634	91.20702	8.792982
	30th June	5846	1183939	1189785	162631	1352416	87.97478	12.02522
	30th Sep.	6738	1839588	1846326	82869	1929195	95.70448	4.295522
1894	31st Mar.	7248	1581373	1588621	145378	1733999	91.61603	8.383973
	30th June	11970	1099019	1110989	111871	1222860	90.85169	9.148308
	30th Sep.	5487	1934534	1940021	82089	2022110	95.94043	4.059571
1895	31st Mar.	16104	2033354	2049458	75173	2124631	96.46183	3.538167
	30th June	2806	1088522	1091328	86769	1178097	92.63482	7.365183
	30th Sep.	4905	1711560	1716465	74942	1791407	95.81658	4.183416
	31st Dec.	12090	3124208	3136298	94818	3231116	97.06547	2.934528
1896	31st Mar.	34778	1950310	1985088	233917	2219005	89.45847	10.54153

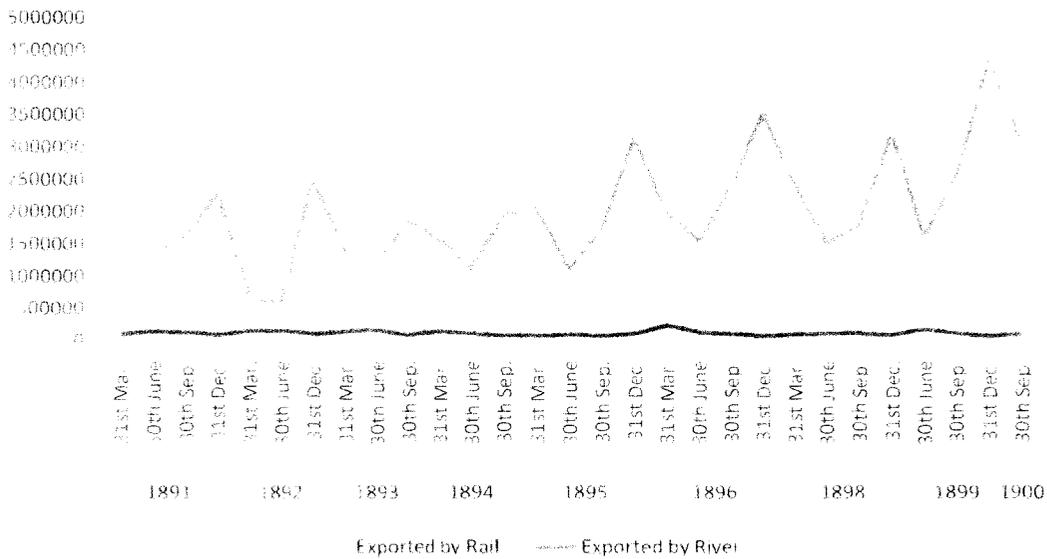
	30th June	10559	1526847	1537406	126019	1663425	92.42412	7.575875
	30th Sep.	2097	2402225	2404322	96433	2500755	96.14384	3.856155
	31st Dec.	8101	3505717	3513818	65708	3579526	98.16434	1.835662
1898	31st Mar.	13634	2414722	2428356	89353	2517709	96.45102	3.54898
	30th June	5507	1499961	1505468	107847	1613315	93.31519	6.684807
	30th Sep.	1272	1775805	1777077	111168	1888245	94.11263	5.887372
	31st Dec.	3791	3193559	3197350	76287	3273637	97.66966	2.330344
1899	30th June	12141	1599870	1612011	170094	1782105	90.45544	9.544555
	30th Sep.	2741	2526839	2529580	105615	2635195	95.99214	4.007863
	31st Dec.	65593	4285061	4350654	67129	4417783	98.48048	1.519518
1900	30th Sep.	199611	2833678	3033289	97568	3130857	96.88366	3.116335
Total		550849	57444604	57995453	3244486	61239939		
Percentage according to Total Exported By Rail and River		0.89	93.80	94.70	5.29			

Source: *Return of the Rail and River-Borne Trade of Bengal, Statement No. II- Trade by Rail between the different Blocks of Bengal and the different Provinces of India, Statement No. III -Trade by Rail between the different blocks of Bengal, Statement B: The River-borne trade between Assam and several blocks of Bengal, for the years 1891, 1892, 1893, 1894, 1895, 1896, 1898, 1899 and 1900, and the mentioned Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta. (For Detail Page and Table No. See Reference No.3)*

Table No. 3.3.4, undoubtedly establishes the argument, that the railway was more acceptable and dominant way of communication for the export traffic with Assam and North Bengal. The role of the conventional mode gradually became insignificant for the export–trade with Assam and North Bengal. It is also significant that when the total export quantity was increasing at the same time the export by the river Brahmaputra was progressively decreasing.

Table No. 3.3.4

Comparative Role of the Railway and River on the Export Trade from North Bengal (1891- 1900)



Source: *Return of the Rail and River-Borne Trade of Bengal, Statement No. II- Trade by Rail between the different Blocks of Bengal and the different Provinces of India, Statement No. III –Trade by Rail between the different blocks of Bengal, Statement B: The River–borne trade between Assam and several blocks of Bengal, for the years 1891, 1892,1893,1894,1895,1896,1898,1899 and 1900, and the mentioned Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta. (For Detail Page see theTable No. 3.3.3)*

3.3.3. Comparative Study of the Import Trade in North Bengal by the Railway and River for the years, 1906-10:

The above study indicates that the railway and river-borne trade limited between the total export-import trades by the railways vs. export-import trade only by the river Brahmaputra between Assam and North Bengal. The aforesaid study confines trade between the river Brahmaputra between Assam and North Bengal. The Nadia River system traditionally was the main channel of the river-borne trade between Calcutta and Northern Bengal but the role of the river trade between North Bengal and Calcutta not calculated in the previous discussion. At the same time, the Ganges took an essential role in the export-import trade between North Bengal with United Province, Agra and Oudh. After the partition of Bengal in 1905, all the districts of North Bengal were included under the Rajshahi Block except the district Darjeeling and Coochbehar State. After partition, in 1907, the first report on the trade of the amalgamated province of Eastern Bengal and Assam was published by the Government of the Eastern Bengal and Assam. The record of the blocks of the Eastern Bengal and Assam by rail with one another and with other provinces of India prepared in the Railway audit offices from where invoices of goods dispatched. In a similar way, a record of the trade carried by steamers between the various blocks of this province and Bengal, and United Provinces prepared from invoices preserved in the offices of the Steamship Companies. The trade carried by steamers between Calcutta, and the several blocks of Eastern Bengal and Assam was registered separately; however, no record was kept of the steamer-borne trade of the various blocks of this province with one another. All traffic by country boat between this province, and Calcutta was recorded by special agencies maintained by the Calcutta Port Commissioners. Previously, the registering stations at *Dhubri* and *Bharab Bazar* recorded all country boat trade from and into the Assam and *Surma* Valleys, respectively: however, since the 31st March 1906, no record has been kept of the trade between these two valleys of Assam and the Eastern Bengal portion of this province, but only of their trade with Bengal and the United Provinces. Therefore, the table bellow only indicates the river-borne trade between North Bengal with Bengal and United Province between the years 1906 to 1910. Consequently, we have a limitation on the precise comparative study between railways and river-borne trade due to lack of the data of the export-import trade between North Bengal and Assam.

Table No. 3.3.5**Comparative Study of the Import Trade in North Bengal by the Railway and River for the years, 1906-10.**

(Excluding the District Darjeeling and Coochbehar State)

(Quantity in Mounds: 82.2/7 lbs.)

Year	Total quantity in Mounds		Total by the Rail & River	Percentage	
	By the Rail	By the River		Railways	River
1906-7	6516268	1337202	7853470	82.97311	17.02689
1907-8	5918376	1170949	7089325	83.48293	16.51707
1908-9	7482500	1065180	8547680	87.53837	12.46163
1909-10	8154234	1318832	9473066	86.07809	13.92191
1910-11	8066483	1301282	9367765	86.10894	13.89106

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table I* : Showing Quantity (in mounds) and value (in rupees) of each article imported by rail and river into each block of Eastern Bengal and Assam from other provinces, during the above mentioned years. *Table III* : Showing Quantity (in mounds) and value (in rupees) of each article imported by river only into each block of Eastern Bengal and Assam from other provinces, in the year 1906-7, 1907-8, 1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong. For Detail Page and Table No see Ref No.4.⁴

The above table undoubtedly indicates that railways took a dominant role on the import trade between North Bengal with other provinces of Bengal and India in the first decade of the 20th century. It was consistently capturing the market of the river-borne traffic; consequently, the percentage of river-borne traffic remarkably decreasing. We may also assume that the percentage of the river-borne traffic will be more if we add the data of the river-borne traffic between Assam and North Bengal.

3.3.4. Comparative Study between the Railways and River Import Trade from where Both the Systems were Available in North Bengal:

We have calculated the import data separately to study the exact comparative role of the railways and river, from where both the systems were available. At first, we study the import trade between Bengal (excluding Calcutta) and North Bengal in the Table No. 3.3.6, where both the systems were available for the import trade. The study clearly indicates that the railways gradually captured the import trade and in the last year 1910-11, the role of railways was 90.53% from the total imported by both. It is also remarkable that the major import trade with Calcutta mainly conducted by the railways. The quantity of the entire import from Calcutta constantly increased. Significantly, at the same time, the role of river-born traffic continued up to the first decade of the 20th century. Undoubtedly, the responsibility of the railway was more than 80% in respect of the total import from Calcutta. In 1860, before the foundation of the NBSR, Eastern Indian Railway line extended from Calcutta to Rajmahal, which also took an essential role to export-import trade between North Bengal and Calcutta. However, before 1860, the total import-export trade was completely depending on the Nadia river system, but within 50 years, railway captured more than 80% import trade from Calcutta.

Table No. 3.3.6

Comparative Study Between the Railways and River Import Trade from where Both the Systems were Available in North Bengal.

(Excluding the District Darjeeling and Coochbehar State)

(Quantity in Mounds: 82.2/7 lbs.)

Year	Total Quantity in Mounds		Percentage	
	By the Railways	By the River	Railways	River
	Imported From Bengal (Excluding Calcutta)			
1906-7	2277717	501344	81.95995	18.04005
1907-8	2257318	400737	84.92368	15.07632
1908-9	2936677	356007	89.18794	10.81206
1909-10	3064656	357148	89.56258	10.43742
1910-11	3775666	394663	90.53641	9.463594
	Imported from United Province ,Agra & Oudh			

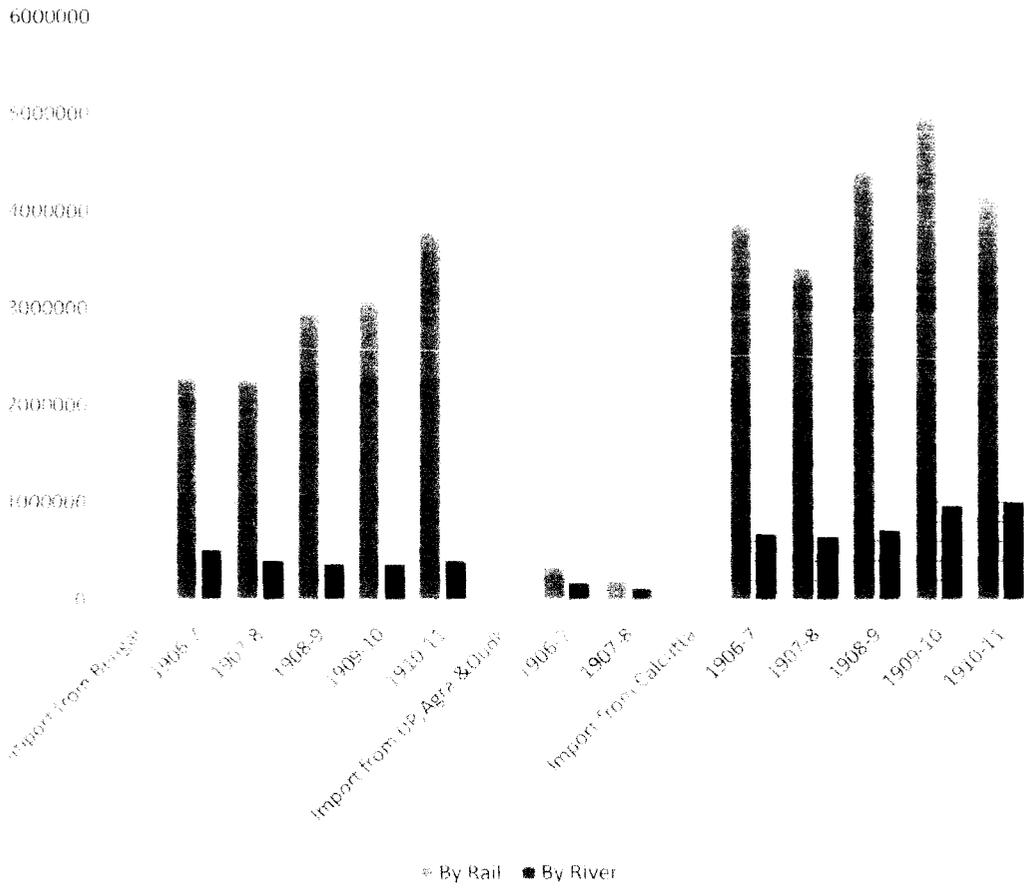
1906-7	332275	166741	66.58604	33.41396
1907-8	188306	121980	60.68788	39.31212
Imported from Calcutta				
1906-7	3871825	669117	85.2648	14.7352
1907-8	3403376	648232	84.00062	15.99938
1908-9	4412591	709173	86.15374	13.84626
1909-10	4944709	961684	83.71791	16.28209
1910-11	4144735	996619	80.61563	19.38437

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table I : Showing Quantity (in mounds) and value (in rupees) of each article imported by rail and river into each block of Eastern Bengal and Assam from other provinces, during the above mentioned years. Table III : Showing Quantity (in mounds) and value (in rupees) of each article imported by river only into each block of Eastern Bengal and Assam from other provinces, in the year 1906-7,1907-8,1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office (EBASP), Shillong. For Details see reference 5.*⁵

We have also the data of the import trade between North Bengal with the United Province, Agra, and Oudh by both railways and river. The river Ganges took an essential role to import the products from United Province, Agra and Oudh. Though, the total quantity of import was comparatively low from Calcutta and Bengal, but the role of the river was relatively dominant still up to 1907. We do not have any record of the river borne trade after the year 1907-8. However, we may assume the significant role of the river Ganges to the import trade in North Bengal. The above analysis clearly signifies the comparative role of the railways and river-borne trade without any error probability. Table No. 3.3.7 graphically represents the comparative role of the railway and river on the import trade in North Bengal. In the year 1906 to 1910, in average, railways imported 85% of the total whereas, the role of the river-borne was only 15%.

Table No. 3.3.7

Comparative Role of the Railway and River on the Import Trade in North Bengal (1906-10)



Source: According to the statistics of the Table No. 3.3.6.

3.3.5. Comparative Study of the Export Trade in North Bengal, 1906-10.

Table no. 3.3.8 indicates the total export trade between North Bengal with the others' province Bengal and India between the years 1906 to 1910. Consequently, we have a limitation on the precise comparative study between railways and river-borne trade due to lack of the data of the export trade between North Bengal and Assam, mainly by the river Brahmaputra.

Table No. 3.3.8

Comparative Study of the Export Trade in North Bengal by the Railway and River for the years, 1906-10.

(Excluding the District Darjeeling and Coochbehar State)

(Quantity in Mounds: 82.2/7 lbs.)

Year	Total quantity in Mounds		Total Quantity by the Rail & River	Percentage	
	By Railways	By River		Railways	River
1907-8	10146068	1376511	11522579	88.05379	11.94621
1908-9	14962096	1319162	16281258	91.89767	8.102335
1909-10	13606087	2878955	16485042	82.53596	17.46404
1910-11	13225246	2340357	15565603	84.96456	15.03544

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table II : Showing Quantity (in mounds) and value (in rupees) of each article exported by rail and river from each internal block of Eastern Bengal and Assam to other provinces, Table IV : Showing Quantity (in mounds) and value (in rupees) of each article exported by, river only, from each internal block of Eastern Bengal and Assam From other provinces, in the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.(For Detail Page No. See Reference No.4)*

The above table undoubtedly indicates in the first decade of the 20th century; railway took a leading role on the export trade between North Bengal and other provinces of Bengal and India. Railway dominantly captured the market of the river-borne traffic; therefore, the percentage of river-borne export remarkably decreased from the total import by the rail and river. We may also assume that the percentage of the river-borne export would be more if

we added the data of the river-borne traffic between Assam and North Bengal. According to same table, it is difficult to calculate the exact comparative role of the railway and river-borne traffic due to lack of the river-borne export data between North Bengal and Assam.

3.3.6. Comparative Study Between the Railways and River Export Trade from where both the Systems were Available in North Bengal,(1906-10) :

We select the same region where both transportation systems were available to export the products from North Bengal like the import study in the Table No: 3.3.6. The export quantity from North Bengal to the Bengal blocks (excluding Calcutta) was constantly increasing between 1906 to 1910. At the same time, the export traffic significantly increased by the railways. The table signifies that the role of the railway was more than 80% to export the products from North Bengal to Bengal block. Though, the quantity of the export to the United Province, Agra and Oudh was very nominal but the role of the river was significant. In the year 1906-7, river took an important role to carry the products from North Bengal and the river Ganges exported 48.84% of the total export. Like as import after 1907-8, we don't have any data of the export trade between North Bengal and United Province, Agra and Oudh. The same table also indicates the products of North Bengal mostly exported to Calcutta, where the role of the railway was more than 83% in respect of total export.

Table No. 3.3.9**Comparative Study Between the Railways and River Export Trade from where Both the Systems were available in North Bengal, (1906-10).**

(Excluding the District Darjeeling and Coochbehar State)

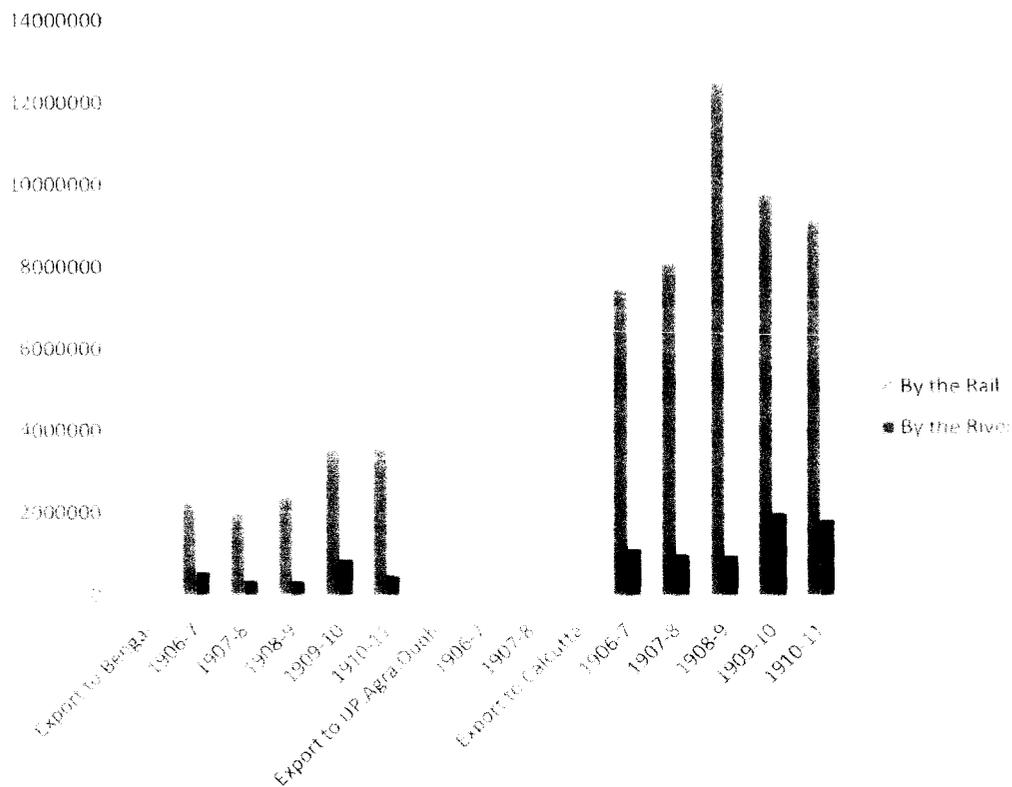
(Quantity in Mounds: 82.2/7 lbs.)

	Total Quantity in Mounds		Percentage	
	Exported to Bengal (Excluding Calcutta)			
Bengal	By the Rail	By the River	% Rail	% River
1906-7	2268461	580946	79.61169	20.38831
1907-8	1980946	358633	84.67105	15.32895
1908-9	2389094	351496	87.17444	12.82556
1909-10	3559155	879384	80.18754	19.81246
1910-11	3627439	494390	88.00557	11.99443
Exported to United Province, Agra and Oudh				
1906-7	32240	30781	51.15755	48.84245
1907-8	72576	29258	71.26893	28.73107
Exported to Calcutta				
1906-7	7472589	1120224	86.96324	13.03676
1907-8	8092478	988620	89.11343	10.88657
1908-9	12472961	967666	92.80044	7.19956
1909-10	9806976	1999571	83.06388	16.93612
1910-11	9155495	1845967	83.22071	16.77929

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table II* : Showing Quantity (in mounds) and value (in rupees) of each article exported by rail and river from each internal block of Eastern Bengal and Assam to other provinces, *Table IV* : Showing Quantity (in mounds) and value (in rupees) of each article exported by, river only, from each internal block of Eastern Bengal and Assam From other provinces, in the year 1906-7,1907-8,1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong. (For Detail Page No. See Reference No.4)

Table No. 3.3.10

Comparative Role of the Railway and River on the Export Trade in North Bengal (1906-10)



Source: Graph according to Table No. 3.3.9

The graphical interpretation evidently signifies the role of the railway traffic was dominant from the river-borne traffic. The railway carried 86.33% of the entire export from North Bengal to our selected blocks or provinces where the role of the river was only 13.37%. The study significantly indicates that the total export quantity of North Bengal dominantly increased. The export to the United Province, Agra and Oudh was very nominal though the role of the river was highly significant.

3.3.7. Comparative Study of the Total Import Trade in North Bengal, 1912-21.

In 1912, the Bengal Presidency was redistributed into six trade block where the Northern Bengal block was comprised by the districts of our study area, including Darjeeling and Coochbehar state, which reverted after 1911. A record of the trade of the different blocks by rail, with one another and with other provinces, was prepared in the railway audit offices from invoices of goods received. In a similar way, a record of trade carried by steamers between distinct blocks of Bengal and Assam and between Calcutta, Bihar and Orissa and the United Provinces was prepared from invoices preserved in the office of the various steamship companies. The trade carried by steamers between Calcutta and different blocks of Bengal was also registered in that way, but the steamer-borne trade of the other blocks of Bengal with one another was not recorded. This is also important that there was no record of the export-import trade by the river Ganges to study the river-borne trade between North Bengal and United Province, Agra and Oudh.

Table No. 3.3.11

Comparative Study of the Total Import Trade in North Bengal by the Railway and River for the years, 1912-21.

Year	Quantity in Mounds (82.2/7 lbs.)		Total Imported by the Rail and River	Percentage	
	By the Rail	By the River		Railways	River
1912-13	8751995	2516112	11268107	77.6705	22.3295
1913-14	11646492	2600588	14247080	81.74652	18.25348
1914-15	10751842	1718844	12470686	86.21693	13.78307
1915-16	11025902	1725983	12751885	86.46488	13.53512
1917-18	7937553	1392164	9329717	85.07818	14.92182
1918-19	7930481	1334882	9265363	85.59277	14.40723
1919-20	8361498	1224068	9585566	87.23009	12.76991
1920-21	9323212	1118033	10441245	89.29215	10.70785

Source: Report on the Trade Carried by Rail and River in Bengal Table No. I: Quantity (in mounds) and Value (in rupees) of each Article Imported by Rail and River into each Internal Block in Bengal from each External block and from Calcutta, and into Calcutta from Bengal,

Table No. III: Quantity (in mounds) and Value (in rupees) of each Article Imported by River into each Internal Block in Bengal from Assam and from Calcutta ; and from the United Province of Agra and Oudh, from Bihar and Orissa and from Bengal into Calcutta in the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta. For details see End Note.⁶

The above table signifies the picture of the import trade between the years 1912 to 1921, where the role of the railway traffic was consistently increasing. At the same time, the role river was constantly decreasing. We may also assume that the percentage of the river-borne traffic would be more if we add the data of the river-borne trade by the river Ganges into North Bengal from the United Province, Agra and Oudh. Hence, the above table indicates the total comparative trend of the railway and river-borne traffic except by the river Ganges with the United Province, Agra and Oudh.

3.3.8. Import Trade between North Bengal and Calcutta by the Railway and River, 1912-21:

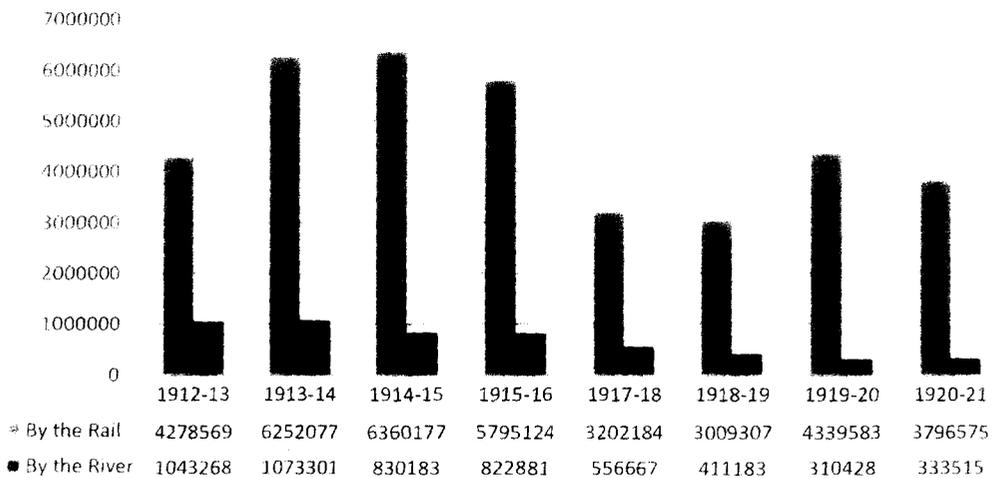
Year	Quantity in Mounds (82.2/7 lbs.)		Total Imported by the Rail and River	Percentage	
	By the Rail	By the River		Rail	River
1912-13	4278569	1043268	5321837	80.39647	19.60353
1913-14	6252077	1073301	7325378	85.34818	14.65182
1914-15	6360177	830183	7190360	88.45422	11.54578
1915-16	5795124	822881	6618005	87.56603	12.43397
1917-18	3202184	556667	3758851	85.1905	14.8095
1918-19	3009307	411183	3420490	87.97883	12.02117
1919-20	4339583	310428	4650011	93.32414	6.675855
1920-21	3796575	333515	4130090	91.92475	8.075248

Source: Report on the Trade Carried by Rail and River in Bengal Table No. I: Quantity (in mounds) and Value (in rupees) of each Article Imported by Rail and River into each Internal Block in Bengal from each External block and from Calcutta, and into Calcutta from Bengal, Table No. III: Quantity (in mounds) and Value (in rupees) of each Article Imported by River into each Internal Block in Bengal from Assam and from Calcutta ; and from the United Province of Agra and Oudh, from Bihar and Orissa and from Bengal into Calcutta in the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Calcutta.(For Detail Page No. See Reference No.5)

In above table, the import trade between North Bengal and Calcutta calculated to study the exact comparative role of the railways and river. The study is possible only where both the systems were available. The study clearly indicates that the railways gradually captured the import trade and in the last year 1920-21, it was 91.92% from the total imported by both. The quantity of the entire import from Calcutta constantly increased during the first World War but after that the quantity of the total import remarkably decreased. Another important finding is that the responsibility of the railway continuously increased, and it was more than 87% in average, in respect of the total import from Calcutta between the years 1912-21.

Table No. 3.3.13

Comparative Role of the Railway and River on the Import Trade Between North Bengal and Calcutta (1912-1921).



Source: Graph Prepared According to Table No. 3.3.12.

The graphical interpretation of the above table shows the gradual degradation of the role of the river-borne import trade between Calcutta and North Bengal. We have already mentioned that after the First World War, the quantity of the import remarkably decreased basically in the years 1917-18 and 1918-19, but after that the trend of the import relatively developed by the railway simultaneously, the river-borne trade constantly declined.

3.3.9. Import Trade between North Bengal and Assam by the Railway and River, 1912-21:

Table No. 3.3.14

Comparative Study of the Import Trade between North Bengal and Assam by the Railway and River (1912-21).

Year	Quantity in Mounds (82.2/7 lbs.)		Total Imported by the Rail and River	Percentage	
	By the Rail	By the River		Rail	River
1912-13	167444	1472844	1640288	10.20821	89.79179
1913-14	306632	1527287	1833919	16.72004	83.27996
1914-15	299978	888661	1188639	25.2371	74.7629
1915-16	300382	903102	1203484	24.95937	75.04063
1917-18	373131	835497	1208628	30.87228	69.12772
1918-19	397051	923699	1320750	30.06254	69.93746
1919-20	883109	913640	1796749	49.15038	50.84962
1920-21	367721	784518	1152239	31.9136	68.0864

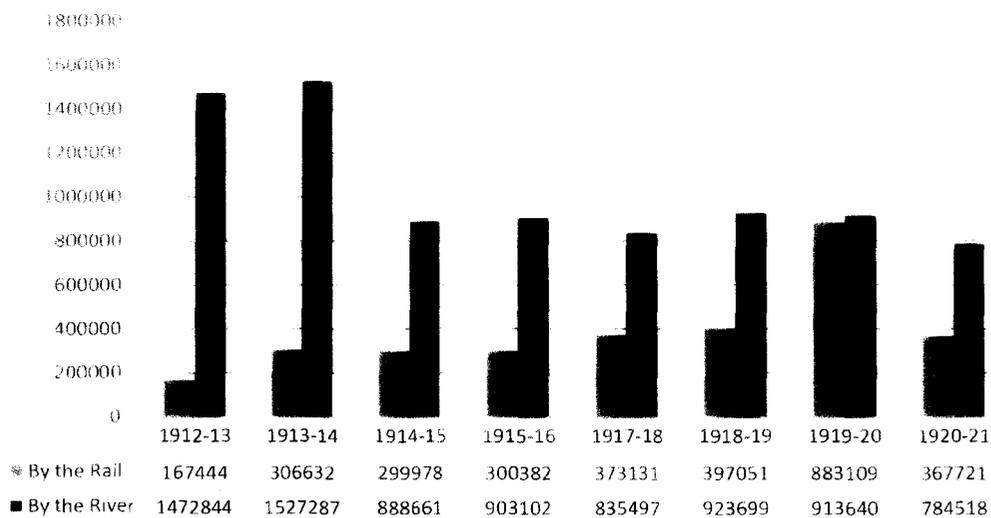
Source: *Report on the Trade Carried by Rail and River in Bengal Table No. I: Quantity (in mounds) and Value (in rupees) of each Article Imported by Rail and River into each Internal Block in Bengal from each External block and from Calcutta, and into Calcutta from Bengal. Table No. III: Quantity (in mounds) and Value (in rupees) of each Article Imported by River into each Internal Block in Bengal from Assam and from Calcutta ; and from the United Province of Agra and Oudh, from Bihar and Orissa and from Bengal into Calcutta in the*

Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21,
Published by the Government of Bengal, Calcutta. (For Detail Page No. See Reference No.5)

The above table is very significant relating to the river-borne traffic. The study is also important as the role of the river is more dominant from the railway even up to the year 1921. It was possible by the river Brahmaputra, which took an essential role in the import trade between Assam to North Bengal. Therefore, clearly after 43 years from the foundation of the railway in North Bengal, the river obviously succeeded to hold the dominant role. The total import quantities fluctuate according to the years; it was high in the year 1913-14 but after that it was frequently decreasing. In the year 1919-20, the quantity again improved. Though, the total import quantity from the Assam constantly fluctuated, but we have a trend of the sluggish development of the railways traffic.

Table No. 3.3.15

Comparative Role of the Railway and River on the Import Trade Between North Bengal and Assam (1912-1921).



Source: Graph Prepared According to Table No. 3.3.14.

The graphical representation also highlights the dominant role of the river-borne traffic, which undoubtedly high at the initial stage (1912-13 and 1913-14), after that it lightly fluctuated. The role of the railway slowly increased and reached at the highest point in the year 1919-20, after that it again declined. Obviously the findings reject our selected hypothesis and signify the importance of river transport even after the development of railways.

3.3.10. Total Export Trade in North Bengal by the Railway and River for the years, 1912-21:

Year	Quantity in Mounds (82.2/7 lbs.)		Total Imported by the Rail and River	Percentage	
	By the Rail	By the River		Rail	River
1912-13	11917141	1813573	13730714	86.79185	13.20815
1913-14	11153079	1620033	12773112	87.31685	12.68315
1914-15	7504373	1281693	8786066	85.41221	14.58779
1915-16	11377999	1298082	12676081	89.7596	10.2404
1917-18	10811104	1303073	12114177	89.2434	10.7566
1918-19	13997144	1787245	15784389	88.67714	11.32286
1919-20	14130180	856250	14986430	94.2865	5.713502
1920-21	13589930	985566	14575496	93.2382	6.761801

Source: *Report on the Trade Carried by Rail and River in Bengal*, Table No. II: Quantity (in mounds) and Value (in rupees) of each Article Exported by Rail and River from each Internal Block in Bengal to each External block and to Calcutta, and from Calcutta to Bengal. **Table No. IV:** Quantity (in mounds) and Value (in rupees) of each Article Exported by River from each Internal Block in Bengal to Assam and to Calcutta; and to the United Province of Agra and Oudh, to Bihar and Orissa and to Bengal from Calcutta in the Official years **1912-13, 1913-14, 1914-15, 1915-16, 1917-18, 1918-19, 1919-20, 1920-21**, Published by the Government of Bengal, Calcutta⁷. (For Detail Page No. See Reference No.5)

The above table signifies the picture of the export trade between the years 1912 to 1921, where the role of the railway was consistently increasing. At the same time, the role of the river-borne traffic was constantly decreasing. We may also assume that the percentage of river traffic would be more if we add the data of the river-borne trade by the river Ganges into North Bengal from the United Province, Agra and Oudh. Hence, the above table indicates the total comparative trend of the railway and river-borne traffic except by the river Ganges with the United Province, Agra and Oudh.

3.3.11. Export Trade between North Bengal and Calcutta by the Railway and River, 1912-21:

Table No. 3.3.17

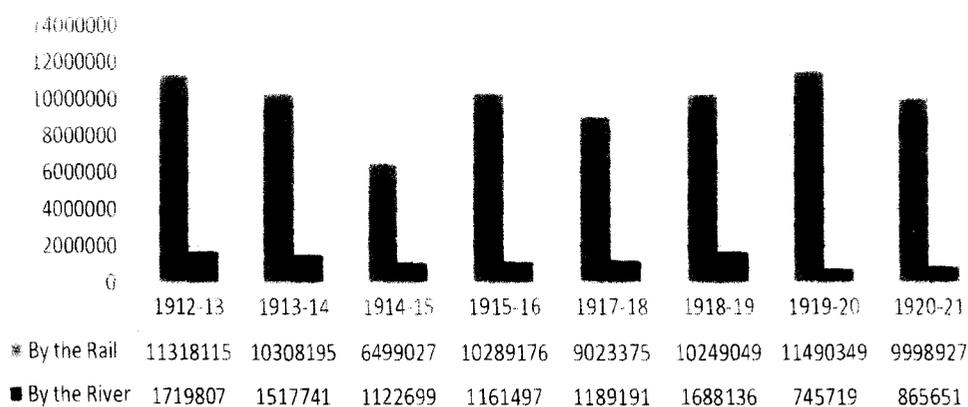
Comparative Study of the Export Trade between North Bengal and Calcutta by the Railway and River (1912-21).

Year	Quantity in Mounds (82.2/7 lbs.)		Total Imported by the Rail and River	Percentage	
	By the Rail	By the River		Rail	River
1912-13	11318115	1719807	13037922	86.80919	13.19081
1913-14	10308195	1517741	11825936	87.166	12.834
1914-15	6499027	1122699	7621726	85.26975	14.73025
1915-16	10289176	1161497	11450673	89.85652	10.14348
1917-18	9023375	1189191	10212566	88.35561	11.64439
1918-19	10249049	1688136	11937185	85.85817	14.14183
1919-20	11490349	745719	12236068	93.90557	6.094433
1920-21	9998927	865651	10864578	92.03236	7.967645

Source: *Report on the Trade Carried by Rail and River in Bengal*, Table No. II: Quantity (in mounds) and Value (in rupees) of each Article Exported by Rail and River from each Internal Block in Bengal to each External block and to Calcutta, and from Calcutta to Bengal. **Table No. IV:** Quantity (in mounds) and Value (in rupees) of each Article Exported by River from each Internal Block in Bengal to Assam and to Calcutta; and to the United Province of Agra and Oudh, to Bihar and Orissa and to Bengal from Calcutta in the Official years 1912-13, 1913-14, 1914-15, 1915-16, 1917-18, 1918-19, 1919-20, 1920-21, Published by the Government of Bengal, Calcutta. (For Detail Page No. See Reference No.5)

According to above table, the import trade between North Bengal and Calcutta has calculated to study the exact comparative role of the railway and river. It is possible because the export trade was available by both the railways and river between both places. At first, we have studied the report on the export trade between Calcutta and North Bengal, where both the systems were convenient to use the export trade. The study clearly indicates that railway progressively captured the export trade and in the last year 1920-21, it was 92.03% from the total exported by both. It is also impressive that the major products of North Bengal mainly exported to Calcutta by the railways, and the function of the Nadia River system was comparatively thin. The quantity of the entire export to Calcutta was uneven during the First World War but after that the quantity of the whole export slightly increased. Another important finding is that the responsibility of the railway was continuously increasing after the year 1914-15, and it was more than 88% in average relating to the total export from North Bengal to Calcutta for the years 1912-21.

Table No.3.3.18
Comparative Role of the Railway and River on the
Export Trade Between North Bengal and
Calcutta(1912-1921).



Source: Graph Prepared According to Table No. 3.3.17.

The graphical explanation shows that the river-borne trade remarkably declined in the last two years at the same time the role of the railway was more than 92% from the total export. Except in the year 1918-19, the river borne trade slowly lost previous dominant

role. The table also indicates that the major export from North Bengal mainly continued with Calcutta, where the role of river-borne traffic gradually faded.

3.3.12. Export Trade between North Bengal and Assam by the Railway and River, 1912-21:

We already mentioned in our previous discussion that the role of the river-borne trade with Assam was very relevant. In the year 1912-13 to 1920-21, in average it was 72.60% which undoubtedly significant, and we may assume that without any special step to improve the water communication the river dominantly continued up to the second decade of the 20th century. However, in the same region, the upward export trade against the current was only 31.24%. Instead of the high, river trades facility; the export from North Bengal to Assam mainly conducted by the railway.

Table No. 3.3.19

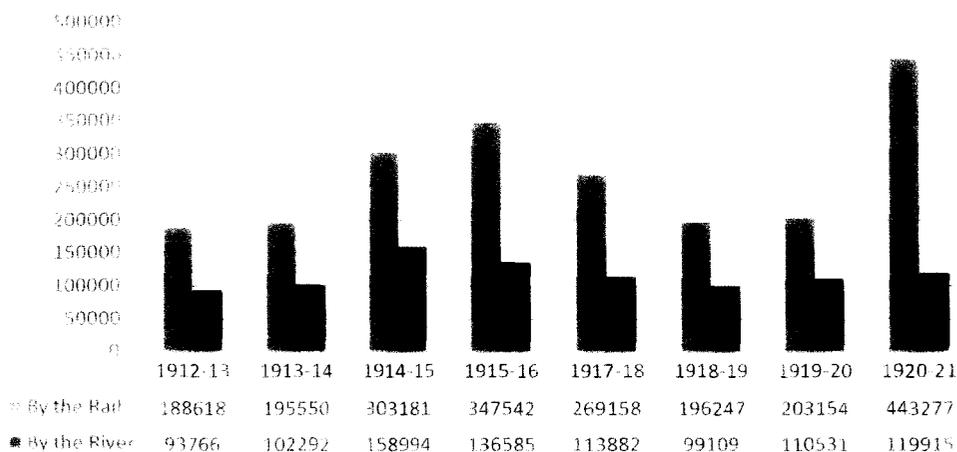
Comparative Study of the Export Trade between North Bengal and Assam by the Railway and River (1912-21).

Year	Quantity in Mounds (82.2/7 lbs.)		Total Imported by the Rail and River	Percentage	
	By the Rail	By the River		Rail	River
1912-13	188618	93766	282384	66.79486	33.20514
1913-14	195550	102292	297842	65.65562	34.34438
1914-15	303181	158994	462175	65.59875	34.40125
1915-16	347542	136585	484127	71.78736	28.21264
1917-18	269158	113882	383040	70.2689	29.7311
1918-19	196247	99109	295356	66.44422	33.55578
1919-20	203154	110531	313685	64.7637	35.2363
1920-21	443277	119915	563192	78.70797	21.29203

Source: *Report on the Trade Carried by Rail and River in Bengal*, Table No. II: Quantity (in mounds) and Value (in rupees) of each Article Exported by Rail and River from each Internal Block in Bengal to each External block and to Calcutta, and from Calcutta to Bengal. **Table No. IV:** Quantity (in mounds) and Value (in rupees) of each Article Exported by

River from each Internal Block in Bengal to Assam and to Calcutta ; and to the United Province of Agra and Oudh, to Bihar and Orissa and to Bengal from Calcutta in the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Calcutta .(For Detail Page No. See Reference No.5)

Table No. 3.3.20
Comparative Role of the Railway and River on
the Export Trade Between North Bengal and
Assam (1912-1921).



Source: Graph Prepared According to Table No. 3.3.19.

Our graphical explanation clearly indicates though, the facility of the river borne trade was better than any other conventional mode, but the railway emerged as a dominant carrier in export trade due to his high technological benefits instead of the transport cost proximity with the river-borne traffic. The export from North Bengal mainly conducted by the railways, but the role of the river was also considerable. The export by the railway gradually increased from the beginning of the First World War and continued up to the year 1915-16, after that it steadily decreased but in the last year, it increased more than 78% from the total.

According to our hypothesis, transformation of the primitive mode of the transportation system by applying the modern technology like a railway should a notable impact on the merchandise traffic. In the previous chapter, our comparative analysis between the traditional mode and railways indicates that railway was best than the

conventional mode in respect of cost, time, capability, and reliability. In this chapter, we have practically examined the acceptance of the railways as a superior carrier for the internal and external trade, and the findings indicate the comparatively better acceptance of the railways to the other formal modes. In the previous chapter, our relative study between the railway and conventional mode indicates the transport cost proximity between the railway and river-borne traffic. According to our present analysis, instead of the cost proximity between the railway and river traffic, as a whole the railway emerged as a superior carrier according to the above statistical analysis. However, we have also exceptional findings, where the role of river was more dominant from the railway even after passing forty years from the foundation of the railways in North Bengal. The export-import trade with North Bengal mainly continued by the three important water routes: trade by the River Brahmaputra with Assam, by the river Ganges with the United Province, Agra and Oudh and by the Nadia Rivers system with Bengal and Calcutta. We have already studied the role of the river Brahmaputra in import trade from Assam to North Bengal (1912-21), and was very significant and dominant even up to the second decade of the 20th century. Export-import trade with the United Province, Agra and Oudh also continued by the river Ganges, unfortunately we don't have any record of the river-borne trade by the same after 1908, but our study signified the important role of the river Ganges. M. O. Carter (1938) as well noticed the significant role of the river Ganges. "Information is not available to show what is the position after the opening of the new line, but it is possible that the main export in rice and paddy by steamer up to the Ganges to Bihar has been largely unaffected, while that of jute and other commodities to other parts of Bengal has been partially captured by the railway."⁸

The table below indicates even up to 1931 the rice, principal commodity of the Malda district mostly exported by the river Ganges. 'The figures for rice carried by the steamer company are higher than those of all railway stations together. The greater portion comes from *Rohanpur*, and indicates the extent of the business carried on there'⁹. Railway exported the commodities like jute and paddy from North Bengal to Calcutta. Here the role of the Nadia Rivers, mainly by the river Bhagirathi was very nominal. Railway extremely captured the river-borne trade between Calcutta to North Bengal due to seasonal fluctuation and limitation of the river traffic. The study as well indicates the consideration of the river-borne traffic, and the River Brahmaputra and Ganges continued a significant role in the export-import trade in North Bengal.

Table No. 3.3.21
Export of the Principal Goods from Malda for the Year 1930-31
 (Quantity in Mounds: 82.2/7 lbs.)

	Paddy		Rice		Jute	
	Quantity	Percentage	Quantity	Percentage	Quantity	Percentage
By the Rail	19923	89.85	37544	47.57	197694	94.37
By the River	2249	10.15	41364	52.43	11790	5.63

Source: M. O. Carter Op.cit.p.18

1. W.W. Hunter, Op.cit.p.326.

2. The Nadia Rivers system detailed below :

Bhagirathi River- 157 miles to Nadia

Bhairab –Jalangi - 144.25 mile to Nadia

Mathabhanga River-137 mile to the junction of the Hooghly River

Hooghly River- 32 miles from Nadia to Chakdaha

Total : 470.25 miles

Annual Administrative Reports for Roads and Buildings, Irrigation and Railways for the year 1900-1901, Government of Bengal, PWD, 1902. p.29

Return of the Rail and River Borne Trade of Bengal During the Quarter Ending the 31st March 1891, Statement No. II, p. liii.
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Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec.1893,	Statement No. II, p. liii. Statement No. III, p. lxxv.
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Report on the Trade Carried by Rail and River in Bengal, BSBD, Calcutta,	1913-14,	Statement No. I, pp. 5 - 22. Statement No. II, pp. 23 - 42. Statement No. III, pp. 43 - 61. Statement No. IV, pp. 62 - 78.
Report on the Trade Carried by Rail and River in Bengal, BSBD, Calcutta,	1914-15,	Statement No. I, pp. 7 - 24. Statement No. II, pp. 25 - 44. Statement No. III, pp. 45 - 63. Statement No. IV, pp. 64 - 80.
Report on the Trade Carried by Rail and River in Bengal, BSBD, Calcutta,	1915-16,	Statement No. I, pp. 7 - 29. Statement No. II, pp. 30 - 55. Statement No. III, pp. 56 - 70. Statement No. IV, pp. 71 - 86.
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Report on the Trade Carried by Rail and River in Bengal . BSBD, Calcutta,	1919-20	Statement No. I, pp. 7	31
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Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1920-21	Statement No. I, pp. 7	31
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		Statement No. IV, p. 78.	
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1914-15,	Statement No. I, p. 24.	
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⁸ . M. O. Carter, Op.cit. p.16

⁹ . M. O. Carter, Op cit.p.18

Chapter No. 3.4

Impact on Agriculture Economy of North Bengal

3.4. Impact on Agriculture Economy of North Bengal:

There are series of discussion regarding the impact of the railways on the agriculture economy. The findings more or less agree in view that the railways took the essential role to extend the agriculture market due to high technological benefit. John Hurd argued that, 'the agriculture sector of the economy was deeply affected by the widening of markets. For the first time, prices in India were susceptible to any significant shift in world prices. Indian agriculture became linked to world trade cycles. As a part of this linkage ,farmers' decision about which crops to plant were affected by prices set in International markets; for example agriculture began to commercialized ¹. The 'Enquiry into the Rise of Prices in India' has exposed that the railways have enabled the *rayots* to dispose of their surplus production at a fair price, thus increasing their income and their purchasing power, which is again shown by the increase in imports, especially in articles, which do not constitute bare necessities of life. The area under cultivation has generally increased with the advent of railways². Another important study on the rice trade in the *Burdwan* district of Bengal by Achinatyia Kumar Dutta, also indicates the significant role of the railways in the process of agriculture commercialization in the second half of the nineteenth century. According to him, 'rice received considerable commercial significance with the expansion of agricultural commercialization in the second half of the nineteenth century when it was linked to the railway system. *Burdwan* had the advantage of having a wide network of railroads, connecting the district with the market towns of Bengal including Calcutta and other provinces which meant beneficial access to new markets. *Burdwan* had a huge surplus of rice and this could easily be transported by railway'³. It is also argued that the absence of transport facilities not allowed the rapid flow of commodities, and the prices were largely determined by local factors. The advent of a modern transportation system by railways brought about a closer integration of national, regional and local markets. Railways succeeded to link several cultivated regions with many trade centers and numerous feeder roads. The internal as well as the external markets of the agricultural products of Bengal thus tended to expand⁴.

3.4.1. Total Export and Import Trade in North Bengal 1891-1921:

It established in the previous chapter that railways took a leading role in the merchandise traffic of North Bengal, basically to export the agricultural products from North Bengal. We separately test the hypothesis that the development of the railways had a substantial impact on the export and import trade in North Bengal. The findings indicate the trend of the gradual development of the railway as a chief carrier for the internal and external export -import trade, but the findings as well not dilute the importance of the river-borne traffic, mainly by the river Ganges and Brahmaputra. At first, we like to open the total

picture of the export-import trade in North Bengal between the years 1891 to 1921, based on the report on 'The Return of the Rail and River-Borne Trade of Bengal'.

Table No.3.4.1
Total Export and Import Trade In North Bengal 1891-1921
 (Quantity in Mounds: 82.2/7 lbs.)

Year	Import	Export	Percentage	
			Import	Export
1891	4192504	7756184	35.08757	64.91243
1892	4846069	6067929	44.40233	55.59767
1893	3431401	7633163	31.01253	68.98747
1894	3859745	8126853	32.2005	67.7995
1895	4515043	8325251	35.16308	64.83692
1896	6412638	9962711	39.16031	60.83969
1898	4870577	9292906	34.38827	65.61173
1906-7	7853470	11506346	40.56583	59.43417
1907-8	7089325	11522579	38.09027	61.90973
1908-9	8547680	16281258	34.42628	65.57372
1909-10	9473066	16485042	36.49367	63.50633
1910-11	9367765	15565603	37.5712	62.4288
1912-13	11268107	13730714	45.07455	54.92545
1913-14	14247080	12773112	52.72753	47.27247
1914-15	12470686	8786066	58.66694	41.33306
1915-16	12751885	12676081	50.14906	49.85094
1917-18	9329717	12114177	43.50757	56.49243
1918-19	9265363	15784389	36.98784	63.01216
1919-20	9585566	14986430	39.01012	60.98988
1920-21	10441245	14575496	41.73703	58.26297
Average of the Percentage of the total Export and Import (1891-1921)			40.32112	59.67888

Source: *Return of the Rail and River-Borne Trade of Bengal, Statement No. II- Trade by Rail between the different Blocks of Bengal and the different Provinces of India, Statement No. III –Trade by Rail between the different blocks of Bengal, Statement B: The River-borne trade between Assam and several blocks of Bengal, for the years 1891, 1892, 1893, 1894, 1895, 1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table No. I: Quantity (in mounds) and Value (in rupees) of each Article Imported by

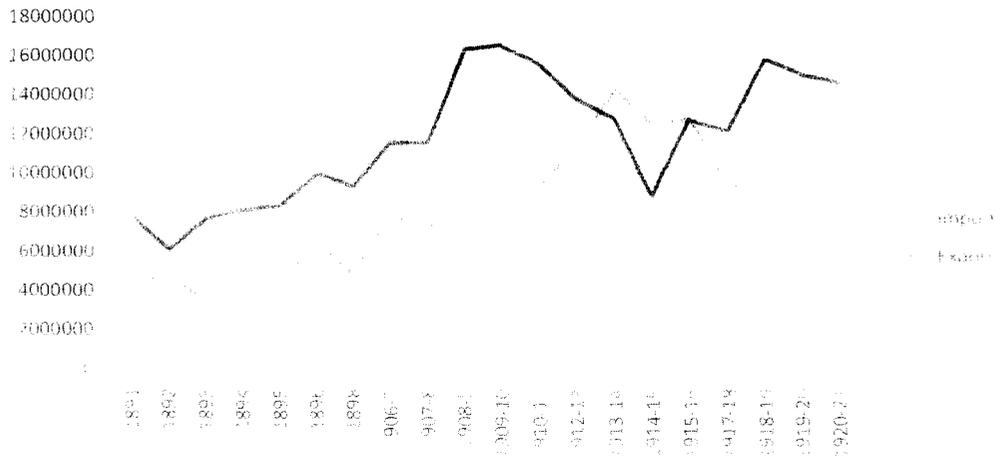
*Rail and River into each Internal Block in Bengal from each External block and from Calcutta, and into Calcutta from Bengal, **Table No. III:** Quantity (in mounds) and Value (in rupees) of each Article Imported by River into each Internal Block in Bengal from Assam and from Calcutta ; and from the United Province of Agra and Oudh, from Bihar and Orissa and from Bengal into Calcutta in the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.*

Report on the Trade Carried by Rail and River in Bengal Table No. I: Quantity (in mounds) and Value (in rupees) of each Article Imported by Rail and River into each Internal Block in Bengal from each External block and from Calcutta, and into Calcutta from Bengal, **Table No. III:** Quantity (in mounds) and Value (in rupees) of each Article Imported by River into each Internal Block in Bengal from Assam and from Calcutta ; and from the United Province of Agra and Oudh, from Bihar and Orissa and from Bengal into Calcutta in the Official years **1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21**, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta⁵.

In 1891 to 1896, the whole export-import trade in North Bengal is calculated by the total trade carried by railways with the provinces of India and the different blocks of Bengal, and the export-import trade carried only by the river Brahmaputra. We have some limitation to study the export-import trade for the year 1906 to 1910. Due to partition of Bengal, the data of the export-import is calculated excluding the Darjeeling district and Coochbehar state. For the years 1906 to 1910, we already mentioned that the total export-import river-borne trade mainly carried by the river Ganges and Nadia rivers system where the role of the river Brahmaputra not included. In 1912, the Bengal Presidency was redistributed into six trade block where the Northern Bengal Block was comprised by all the districts of our study area, including Darjeeling and Coochbehar state, which reverted after 1911. This is also significant that since 1908, there was no record of the export-import trade by the river Ganges between North Bengal and United Province, Agra and Oudh. In the years 1912 to 1921, our analysis just indicates the total export-import trade of North Bengal with Calcutta and the provinces of India. These limitations of the study are applicable for all the further discussions and analyses for this chapter only.

Table No.3.4.2

Comperative Study of the Total Imort and Export Trade in North Bengal:1891-1921



Source: The Graph Prepared According to the Data of the Table No. 3.4.1

The graphical interpretation of the Table No 3.4.1, signifies the proportional growth of the total export and import trade in North Bengal between 1891 to 1921. The total import and export both remarkably increased up to 1910. The entire export from North Bengal was near about 60% in average from the total export-import. Clearly, the intention of the colonial authority for the foundation of railway was not wrong. Northern Bengal was enriched by the affluent and wide agricultural productions, basically for the enormous quantities of tea, jute, rice, tobacco, wood & silk. The administrative report of Bengal evidently indicates the stance of the colonial authority as the foundation of railway in Northern Bengal. Reports on the Administration of Bengal indicate that: "Preliminary surveys have been made for a line from a point on the Ganges opposite to one of the principal stations of the Eastern Bengal line through the rich and populous districts of North Bengal, several of which have a population exceeding 600 per square mile, and, which produce enormous quantities of jute, rice, sugar, tobacco, sugar, silk, and other staples. The line would open up a country of great commercial importance⁶." The export-import trade reports between the years 1891 to 1921 specify that the assumption of the colonial authority was correct, in average, the export from north Bengal was remarkably high, which indicate the agriculture market of North Bengal outstandingly expanded. We have to calculate in our further discussion, was the agriculture sector of the economy deeply

affected by the widening of market? Primarily, we may assume that the growth of the export trade happened due to export of some important agriculture products of North Bengal. However, the most striking feature is that, the graph indicating the gradual degradation of the export trade during the First World War which continued up to the year 1914-15. At the same time, the total import increased exceptionally. The year 1915-16, is very significant from where the growth of export more or less continued up to 1921, but after that the import reduced exceptionally and gradually settled in 1921.

3.4.2. Imported by Rail & River in North Bengal: 1891 to 1921:

The table bellow indicates the relative trend of the total import and export trade by the river and railway from 1891 to 1921. In the previous chapter, we have already discussed the comparative role of the railway and river on the export-import trade. Our discussion was mainly micro level study to understand the trend toward the acceptance of the railway and river-borne trade in the different trade blocks where both the systems were available. Now we like to concentrate our discussion on the total export-import trend from 1891 to 1921 to understand the gradual acceptance of the railways, as well as to recognize the gradual degradation of the river-borne trade. It is mainly calculated in three phases; the year 1891 to 1900, 1906 to 1910 and 1912 to 1921. In the years 1891 to 1900, we select only seven years; those have all four quarterly reports. We don't have any data of the river-borne trade with blocks of the Calcutta and the United Province, Agra and Oudh. Therefore, the data of the river-borne trade (1891-1900) mainly indicates the export-import report by the River Brahmaputra only. In the year 1906 to 1910, we don't have any data of the inter district export-import trade, mostly by the river Brahmaputra. We have the data for the years 1906-07 and 1907-08 by the river Ganges, which maintained the export-import trade with the United Province, Agra and Oudh. For the same years, we have calculated the data of the river-borne trade by the Nadia river system. For the year 1912 to 1921, we have the data of export-import by the river Brahmaputra and Nadia river system, but we don't have any data of the export-import trade by the river Ganges after 1908.

Table 3.4.3
Imported by Rail & River in North Bengal :1891 to 1921

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage by Rail	Percentage by River
1891	2970983	1221521	4192504	70.86417	29.13583
1892	3745332	1100737	4846069	77.28598	22.71402
1893	2745647	685754	3431401	80.01533	19.98467
1894	3099718	760027	3859745	80.30888	19.69112
1895	3506865	1008178	4515043	77.67069	22.32931
1896	5257111	1155527	6412638	81.98047	18.01953
1898	4365152	505425	4870577	89.62289	10.37711
1906-7	6516268	1337202	7853470	82.97311	17.02689
1907-8	5918376	1170949	7089325	83.48293	16.51707
1908-9	7482500	1065180	8547680	87.53837	12.46163
1909-10	8154234	1318832	9473066	86.07809	13.92191
1910-11	8066483	1301282	9367765	86.10894	13.89106
1912-13	8751995	2516112	11268107	77.6705	22.3295
1913-14	11646492	2600588	14247080	81.74652	18.25348
1914-15	10751842	1718844	12470686	86.21693	13.78307
1915-16	11025902	1725983	12751885	86.46488	13.53512
1917-18	7937553	1392164	9329717	85.07818	14.92182
1918-19	7930481	1334882	9265363	85.59277	14.40723
1919-20	8361498	1224068	9585566	87.23009	12.76991
1920-21	9323212	1118033	10441245	89.29215	10.70785
Average of the Percentage				83.16109	16.83891

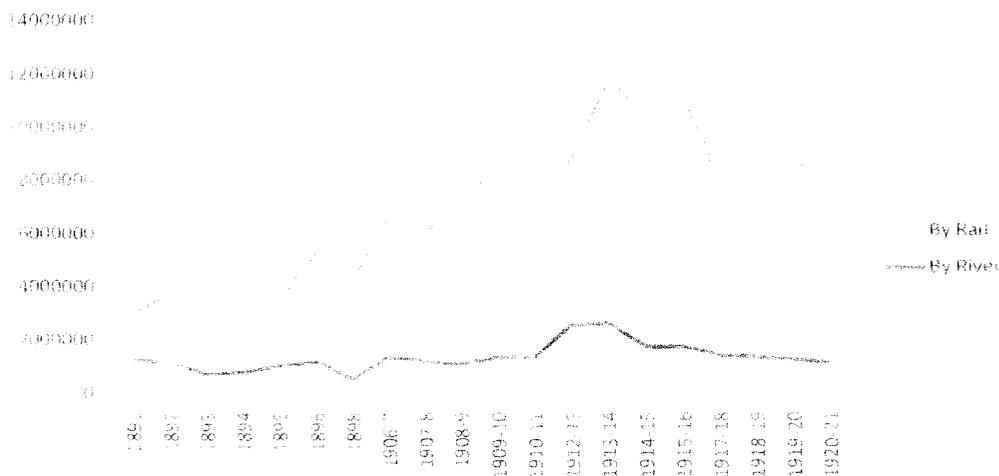
Source: : *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

Report on the Trade Carried by Rail and River in Bengal the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta. (For Detail Statement See Reference 4.)

Table No. 3.4.4

Comperative Study of the Total Import by the Railway and River:1891-1921



Source : *The Graph Calculated According to Table No. 3.4.3*

Our graphical interpretation significantly supports the hypotheses that the railways took an essential role to increase the import trade in North Bengal, which rapidly, helped to open the market of North Bengal. Though, the export-import trade chiefly depends on the main principle of the 'demand and supply', but undoubtedly instead of the cost proximity between railway and river traffic, the acceptance of the railway as a superior carrier is unparalleled with the conventional mode like river. The import by the railways consistently developed up to the year 1913-14, in the year 1917-18 it slightly decreased, and again; it improved at the last year. Whereas, the river traffic was static and comparatively decreasing apart from the years 1912-13 and 1913-14. It is also remarkable that the import traffic was proportionately high by the railways during the First World War. The import, to some extent; as well increased by the river during the years 1912-13 and 1913-14.

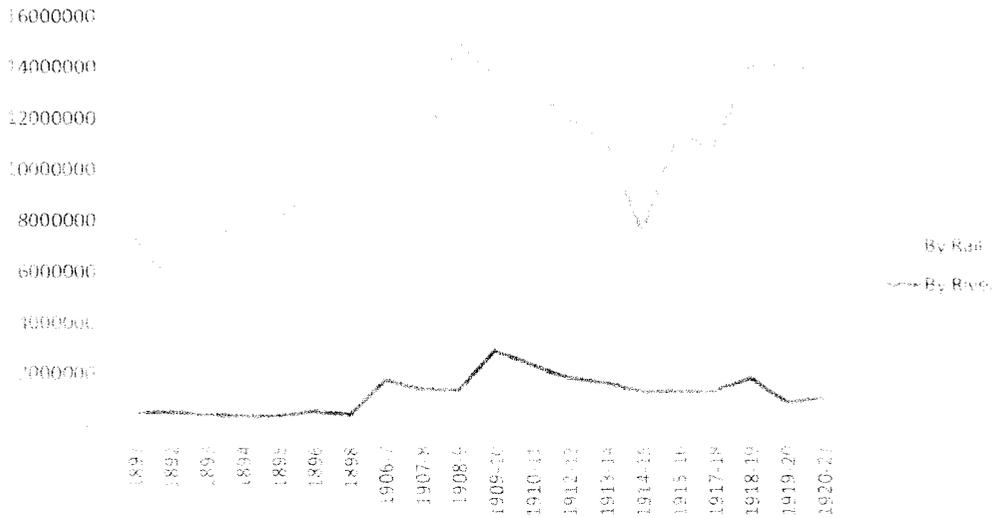
3.4.3. Exported by Rail & River in North Bengal,1891-1921:

Year	By Rail	By River	Total	Percentage	
				By Rail	By River
1891	7305702	450482	7756184	94.19196	5.808037
1892	5569984	497945	6067929	91.79382	8.206177
1893	7253866	379297	7633163	95.03093	4.969067
1894	7787515	339338	8126853	95.82448	4.175515
1895	7993549	331702	8325251	96.01571	3.984288
1896	9440634	522077	9962711	94.75969	5.240311
1898	8908251	384655	9292906	95.86077	4.139233
1906-7	9774395	1731951	11506346	84.94786	15.05214
1907-8	10146068	1376511	11522579	88.05379	11.94621
1908-9	14962096	1319162	16281258	91.89767	8.102335
1909-10	13606087	2878955	16485042	82.53596	17.46404
1910-11	13225246	2340357	15565603	84.96456	15.03544
1912-13	11917141	1813573	13730714	86.79185	13.20815
1913-14	11153079	1620033	12773112	87.31685	12.68315
1914-15	7504373	1281693	8786066	85.41221	14.58779
1915-16	11377999	1298082	12676081	89.7596	10.2404
1917-18	10811104	1303073	12114177	89.2434	10.7566
1918-19	13997144	1787245	15784389	88.67714	11.32286
1919-20	14130180	856250	14986430	94.2865	5.713502
1920-21	13589930	985566	14575496	93.2382	6.761801
Average of the Percentage				90.53015	9.469852

Source: Same as Indicated in Table No.3.4.3

Table No.3.4.6

Comperative Study of the Total Export by the Railway and River:1891-1921



Source: The Graph Calculated According to the Export Data of the Table No.3.4.5

The graphical analysis of the export trade by the railway and river indicates the same argument that the railway took an important role to export the products of North Bengal. We may argue that basically, the agriculture products of North Bengal could connect with the wider national and regional market where the acceptance of river-borne traffic was inadequate. We may assume that the agriculture market of North Bengal expanded due to the railways. The graph is indicating that export trade badly affected during the First World War, but after that the export by the railway gradually increased and able to recover the previous position. In case of the river-borne traffic, in the year 1909-1910, it developed slightly, but subsequently, the graph is indicating gradual degradation of the river-borne traffic, and the difference between two was unparalleled.

3.4.4. Role of the Railways to Open the Market of North Bengal:

Table below signifies the gradual growth of the import by the railway from the different provinces of India and blocks of Bengal. We examine here eighteenth province of India, including Calcutta and Bengal. At the initial stage, the import-trade of Northern Bengal mainly conducted with Calcutta and Bengal by the Nadia River systems. Simply, we

may say the import-trade was Calcutta orient where the role of the river-borne traffic was significant. Unquestionably, the import-trade with the different province of India was impossible without the development of the railways. The table below indicates the constant growth of the inter-provincial trade through the development of the railway communication. The import trade between North Bengal Punjab, Kashmir and Central Province was possible only for the development of the railway communication.

Table No.3.4.7

Role of the Railway to Open the Market of North Bengal:1906-1921

Import from Different Provinces of Indian and Blocks of Bengal

(Quantity in Mounds: 82.2/7 lbs.)

Sl. No.	1	2	3	4	5	6	7	8	9	10
	Assam	Bihar & Orissa	United Province Agra & Oudh	Punjab	Sindh & British Baluchistan	Central Province & Berar	Bombay	Madras	Rajputna & Central India	Nizam's Territory
1906-7			332275	4641		17307			9893	
1907-8			188306	8882		20722			11171	
1908-9			61818	3066		32468			5735	
1909-10			102075	543		37105			4950	
1910-11			84389	3136		31846	1411		24997	
1912-13	167444	3964126	224038	41306	119	46500	196	16	27702	
1913-14	306632	4659651	316892	36801		54870	849	7	14426	
1914-15	299978	3656425	267327	14635		109768	240	33	39968	
1915-16	300382	4429458	369031	35657		37126	52	1119	45619	
1917-18	373131	3877783	372346	19708		27234	1057	19	61638	
1918-19	397051	4097558	331350	8292		41506	10337	53888	38326	
1919-20	883109	2845944	265694	4351	10	51607	1369	5	19448	17
1920-21	367721	4697357	352118	6323		54439	731	9512	34756	1303

Sl. No.	11	12	13	14	15	16	17	18	Total Exported In North Bengal	Value In Rupee
Year	Mysore	Kashmir	Madras Port	Bombay Port	Karachi	Calcutta	Bengal (Excluding Calcutta)	others		
1906-7			1843			3871825	2277717	776	6516277	NA
1907-8			28425			3403376	2257318	176	5918376	NA
1908-9				133		4412591	2936677	12	7482500	NA
1909-10			21	48		4944709	3064656	127	8154234	NA
1910-11			45	249		4144735	3775666	9	8066483	NA
1912-13		283	1695	1		4278569	NA		8751995	26537428.1

913-14	171	12	2727	1377		6252077	NA		11646492	40448533.6
914-15	691		1630	965	5	6360177	NA		10751842	34767295.0 3
915-16	371	9	11600	354		5795124	NA		11025902	41587131.5 7
917-18	71		520	1862		3202184	NA		7937553	44885520.2 5
918-19			273	3623		3009307	NA		7930481	47901675.8 7
919-20	592		21	9748		4339583	NA		8361498	49232224.1 9
920-21	2		87	2026	262	3796575	NA		9323212	44376640.1 6

Source: : *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

Report on the Trade Carried by Rail and River in Bengal the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta⁷.

Table No. 3.4.7 indicates the role of the railways to open up the market of North Bengal. We may assume how railway did help to reduce the price difference and convergence in North Bengal. Though the import trade was Calcutta orient but gradually the import from another province significantly developed due to the railways.

3.4.5. Role of the Railways for Widening the Agriculture Market of North Bengal:

We already discussed that the high fertile region with rich commercial products, was one of the main factors behind the foundation of Railways in North Bengal. Therefore, the agricultural richness of the region was facilitated by the increasing of the export product from North Bengal. Now, we will calculate the export trend from North Bengal. Definitely, due to agricultural richness of this region, the export products were mainly agrarian products. The tea, jute, rice and tobacco were the main products of North Bengal, and they took an indispensable role to flourish the export quantity from North Bengal. In this discussion, we will try to find out the role railway to extend the agriculture market of North Bengal. Table No. 3.4.8 clearly indicates the role railway to expand the agriculture market of North Bengal. In this table, though, we don't use the data for the years 1891 to 1900, but at

the initial stage after the foundation of railway in North Bengal, the export trade was usually Calcutta based where the role of the railway to export the products into the different provinces of India was very nominal. In the year 1906-07 to 1910-11, the export was mainly conducted with the blocks of Bengal but dominantly Calcutta base. According to Table No.3.4.8, for the beginning years export to United Province, Agra and Oudh remarkably increased and reached in the highest point during the years 1909-10 and 1910-11. After 1911, the export was surprisingly scattered to all the provinces of India. Table No.3.4.8 clearly indicates the gradual expansion of the agriculture market of North Bengal, though, at the initial stage the export quantities were nominal. It was possible due to the railway, because the export trade from North Bengal by the rivers had some restrictions. Therefore, this analysis not only consolidates the argument of the widening the agricultural market but also indicates the trend and nature of the expansion of agriculture market by the railways in North Bengal.

Table No.3.4.8

The Role of Railway for Widening the Market of North Bengal

Export to Different Provinces of Indian and Blocks of Bengal

(Quantity in Mounds: 82.2/7 lbs.)

I. No.	1	2	3	4	5	6	7	8	9	10
	Assam	Bihar & Orissa	United Province Agra & Oudh	Punjab	Sindh & British Baluchistan	Central Province & Berar	Bombay	Madras	Rajputna & Central India	Nizam's Territory
06-7			32240			952				
07-8			72576			30				
08-9			92180	7515.3						
09-10			238668.2	158		70.8			1042	
10-11			341846.3	898			95710		3084	
12-13	188618	234017	161582	5901	3	221	275	12	4525	1988
13-14	195550	541104	73400	9513	37	14287	4256	485	2609	3559
14-15	303181	608065	73111	18199	56	180	25	381	1504	
15-16	347542	618332	94336	19296	66	1870	11	84	3702	191
17-18	269158	853397	452272	13269	105	2284	5441	453	15557	81
18-19	196247	1769891	1428898	54900	52433	10252	25592	20	168131	4968
19-20	203154	1702832	606675	31747	10927	11300	8650	1285	38767	1360
20-21	443277	1832824	1216021	42371	184	3965	12106	3133	10141	437

Year	11	12	13	14	15	16	17	18	Total Exported In North Bengal	Value in Rupees
	Mysore	Kashmir	Madras Port	Bombay Port	Karachi	Calcutta	Bengal (Ex. Calcutta)	others		
06-7						7472589	2268461	153	9774395	NA
07-8						8092478	1980946	38	10146068	NA
08-9						12472961	2389094	446	14962096.2	NA
09-10						9806976	3559155	17	13606087.3	NA
10-11						9155495	3627439	774	13225246.2	NA
12-13	2		2	1880		11318115	NA		11917141	55163114.36
13-14	4	1	4	75		10308195	NA		11153079	61039244.41
14-15	16		28	592	8	6499027	NA		7504373	37915969.81
15-16	1	2	16	3364	10	10289176	NA		11377999	60192462.74
17-18			890	150548	24274	9023375	NA		10811104	74506986.73
18-19			3076	21129	12558	10249049	NA		13997144	101173665.4
19-20	1	562	6755	3053	12763	11490349	NA		14130180	112349734.5
20-21	2		3473	23057	17	9998927	NA		13589930	108590002.2

Source: *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

Report on the Trade Carried by Rail and River in Bengal the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta.(For Details See Reference No.6.)

3.4.6. Role of the Railway to Expand the Market of the Rice of North Bengal:

To consolidate the same argument, we like to concentrate our discussion on rice, one of the major agricultural products of North Bengal. The table bellow highly signifies the expansion of the rice market. Here we select two products *Rice in Husk* and *Rice not in Husk*, and three different years: 1891, 1912-13 and 1918-19. In the year 1891, the export of *Rice in Husk* limited within the provinces of Bihar and Orissa and North Western Province and Oudh. In the same year, the export to Eastern Bengal by the railways was dominant. In 1891, *rice in husk* was exported to the two important provinces of India and in three internal

blocks of Bengal. The product *Rice not in Husk* mainly would export to the Bihar, Orissa province and the Calcutta block. This is also significant the export of the same product confined within Bihar, Orissa, Patna, North Western Province and Oudh. The table as well indicates the railways able to export the *Rice in Husk* into three provinces of India and Calcutta block of Bengal in the year 1912-13. In 1918-19, railways exported similar product into nine provinces of India excluding Calcutta. In case of *Rice not in Husk* the trend is more or less same. In the year 1918-19, railways extended the export into ten provinces of India, excluding Calcutta block, whereas for the year 1912-13, it extended into six provinces of India and also in Calcutta block of Bengal. Therefore, we may consolidate our argument that the railway took an indispensable role to widening the agriculture market of North Bengal. It is also remarkable for the extension of rice market the export quantity as well increased. Our previous findings conversely indicate the river-borne traffic limited within the United Province, Agra, Oudh, Assam and few blocks of Bengal.

Table No. 3.4.9

Role of the Railway to Expand the Market of the Rice of North Bengal

Rice Exported from North Bengal

(Quantity in Mounds: 82.2/7 lbs.)

Sl. No.	1	2	3	4	5	6	7	8
Provinces & Blocks	Assam	Bihar, Patna & Orissa	UP, Agra & Oudh	Punjab	Sindh & British Baluchistan	CP & Berar	Bombay & Bombay Port	NWP & Oudh
Year	Rice in Husk							
1891		115765						2472
1912-13	844	59068	13795					
1918-19	3085	628281	361892	9169	22090		2398	
	Rice Not in Husk							
1891		210667						13911
1912-13	143856	74084	129475	1569	0	0	1884	
1918-19	38020	556539	572616	11871	2849	4563	22313	

Sl. No.	9	10	11	12	13	14	15	16	Total Exported from North Bengal
Provinces & Blocks	Rajputna & Cl	Nizam's Territory	Madras Port	Western Bengal	Eastern Bengal	Dacca	Calcutta	others	
Year	Rice in Husk								
1891	3			327	413532		1615		535605
1912-13	0	0	0				1178337		1252044
1918-19	0	2748	0				88524	448	1118635
Rice Not in Husk									
1891	6			2236	98735	281	273668		601395
1912-13	1821	0	0				467244		819933
1918-19	161975	2220	1875				111488		1486329

Source: *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

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3.4.7. Role of the Railways to Export the Major Agriculture Products and Process of Commercialization:

We have already proven the argument that the advent of a modern transportation system by railways brought about a closer integration of national, regional and local markets. According to another argument, the agriculture products received considerable commercial significance to the expansion of agricultural commercialization in the second half of the nineteenth century when it linked with the railway system. Now, we will calculate the role of railway to export the major agriculture products of North Bengal, which accelerate the process of commercialization of agriculture in North Bengal.

3.4.7.1. Rice:

Rice was the common and important agricultural product of North Bengal. The bulk amount of rice would use for the local consumption as a daily food and the rest of the amount send to export. Therefore, the export and import of rice highly depended on the seasonal production. The table below indicates the total import trend of the rice in husk and rice not in husk.

	Import		Export	
	By Rail	By River	By Rail	By River
1891	3614	294903	498395	34
1892	16098	295527	60807	3283
1893	385	127978	497118	2075
1894	2788	72093	636271	1692
1895	240	70191	100622	3725
1896	25221	63960	803371	102156
1898	1688	34808	237817	3914
1906-7	225776	52160	380617	1194
1907-8	81526	16376	471761	8478
1908-9	493963	12030	582918	1111
1909-1910	607051	4825	603586	8298
1910-1911	81477	677	775231	4713
1912-13	61887	806795	1252044	26154
1913-14	141207	861368	270039	436
1914-15	128567	376245	212312	1342
1915-16	209363	393593	394241	1598
1917-18	57895	368687	256820	92
1918-19	94271	491832	1118635	129
1919-20	527131	509952	1016675	1383
1920-21	104780	284529	470647	219

Source: *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

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Table No.3.4.11

Total Rise not in Husk Imported and Exported in/from North Bengai: 1891-1921

(Quantity in Mounds: 82.2/7 lbs.)

Year	Import		Export	
	By Rail	By River	By Rail	By River
1891	89786	3894	598081	86903
1892	776972	7223	125896	141457
1893	48388	130	685846	106576
1894	61660	1985	450243	117859
1895	81107	1426	218223	107508
1896	439966	1253	523986	155586
1898	28550	860	384690	83557
1906-7	156968	914259	114868	21305
1907-8	72319	350590	143438	35407
1908-9	43960	989270	165684	14188
1909-1910	40846	1242560	516347	16226
1910-1911	7788	24253	631790	13815
1912-13	39204	4648	819935	48497
1913-14	639937	43130	166922	5832
1914-15	1500390	72699	98257	5127
1915-16	1705370	94882	163996	10160
1917-18	210645	7628	705328	21169
1918-19	28168	6045	1486356	18836
1919-20	728695	21960	817936	10701
1920-21	130227	3875	578956	15278

Source : Same as Table No.3.4.10

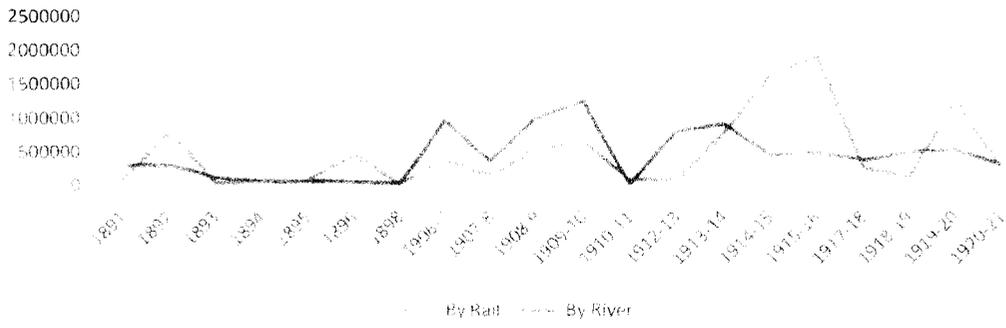
Table No.3.4.12**Total Imported and Exported of Rice in/from North Bengal:1891-1921**

(Quantity in Mounds: 82.2/7 lbs.)

	Import		Total	Export		Total
	By Rail	By River		By Rail	By River	
1891	93400	298797	392197	1096476	86937	1183413
1892	793070	302750	1095820	186703	144740	331443
1893	48773	128108	176881	1182964	108651	1291615
1894	64448	74078	138526	1086514	119551	1206065
1895	81347	71617	152964	318845	111233	430078
1896	465187	65213	530400	1327357	257742	1585099
1898	30238	35668	65906	622507	87471	709978
1906-7	382744	966419	1349163	495485	22499	517984
1907-8	153845	366966	520811	615199	43885	659084
1908-9	537923	1001300	1539223	748602	15299	763901
1909-1910	647897	1247385	1895282	1119933	24524	1144457
1910-1911	89265	24930	114195	1407021	18528	1425549
1912-13	101091	811443	912534	2071979	74651	2146630
1913-14	781144	904498	1685642	436961	6268	443229
1914-15	1628957	448944	2077901	310569	6469	317038
1915-16	1914733	488475	2403208	558237	11758	569995
1917-18	268540	376315	644855	962148	21261	983409
1918-19	122439	497877	620316	2604991	18965	2623956
1919-20	1255826	531912	1787738	1834611	12084	1846695
1920-21	235007	288404	523411	1049603	15497	1065100

Source: Same as Table No.3.4.10 and 3.4.11.

Table No.3.4.13
Comparative Import Study of the Total Rice by
Railways and River:1891-1921

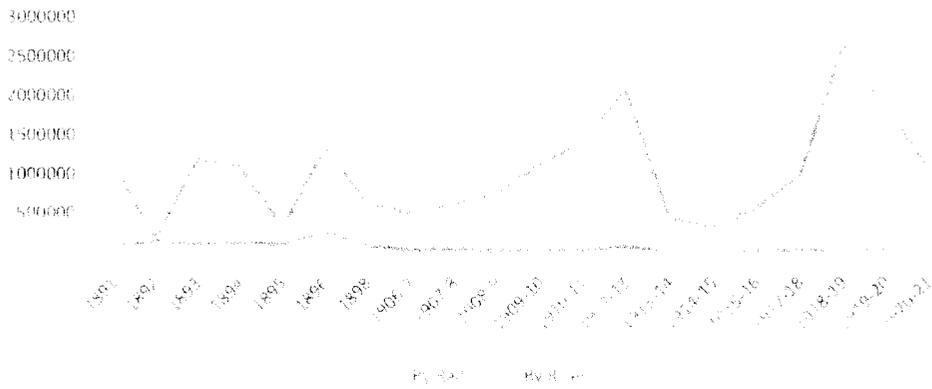


Source: Graph According to Table No.3.4.12

The comparative study evidently indicates the role of the river was very significant to import the rice in North Bengal but railways also took an indispensable role in the years 1913 to 1916. As a whole, the import highly fluctuated according to the seasonal variation, and the import was essential due to poor internal production, which affected the demand of North Bengal.

Table No. 3.4.14

Comparative Export Study of Total Rice by Railways and River:1891-1921

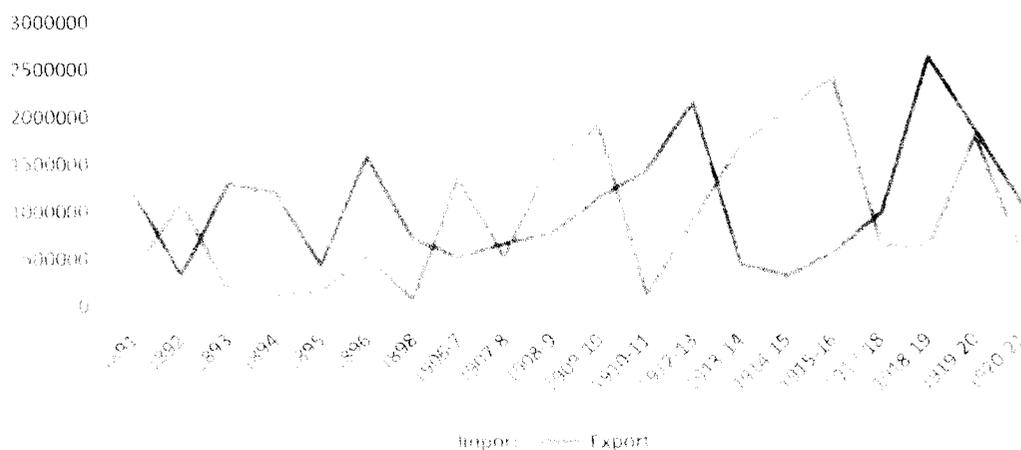


Source: Graph According to Table No. 3.4.12

To export the rice, railways comparatively took an important role. The export also highly fluctuates due to seasonal variation. The table below indicates the inverse relation of the export and import of the rice in North Bengal

Table No.3.4.15

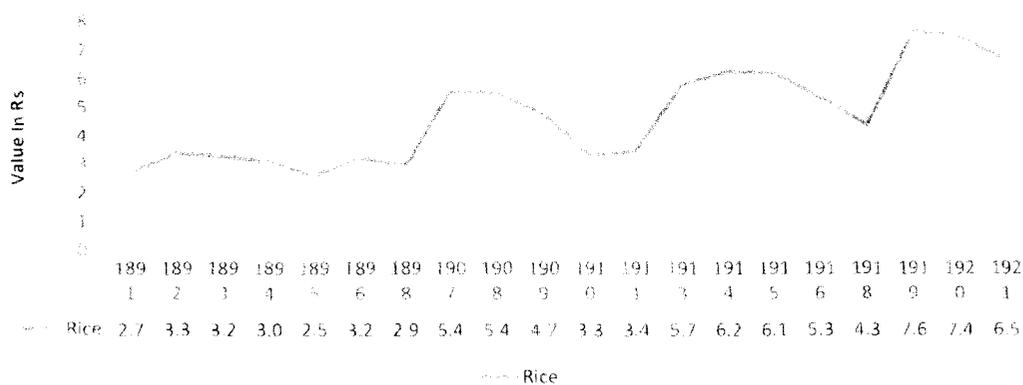
Total Import and Export of Rice:1891-1921



Source: Graph According to Table No 3.4.12

Table No. 3.4.16

Retail Price of Common Rice in Rupees :1891-1921



Source: Prices and Wages in India : 1861-1896 , Thirteenth Issue , Statistical Bureau, Government of India, Office of the Superintendent of Government Printing, India, Calcutta, 1897,Part I, pp. 2-13,

Price and Wages in India :1897-1921, Thirty- seventh Issue, Department of Statistics, India, Published by order of the Governor- General in Council, Superintendent Government Printing India, Calcutta, 1923,Part-II, No.16, pp.72-81,

It is argued that the expansion of agriculture market helped to commercialize the agricultural products. According to Achinaty Kumar Dutta, 'rice received considerable commercial significance with the expansion of agricultural commercialization in the second half of the nineteenth century when it (Burdwan district) was linked to the railway system'⁸. Here we calculate the relation between the price hike of common rice with the hike of export and import quantity of the rice in North Bengal (data selected according to Table No.3.4.12 and 3.4.16). At first, we calculate the correlation between the export and retail price of the common rice according to selected years from the Table No. 3.4.12 and Table No.3.4.16. The value of correlation is 0.2869 and positive, but statistically very negligible (below 0.5). The correlation between import and value of common rice is 0.4866 which statistically nearest to significant value (0.5). The study as well indicates the price hike of common rice much better related to the scarcity of production due to seasonal variation. Table No. 3.4.16 shows the fluctuation in the value of common rice, which happened due to variation in the internal production basically, for the seasonal variation due to monsoon, and the role of external demand was negligible. We also calculate the correlation between the price hike of common rice and wage hike of the agricultural labourer in the Dinajpur and Rangpur districts of North Bengal. The findings indicate, in the Rangpur district, there was very negligible relation (0.1127) with the price hike of rice and the wage rate of the common agricultural labourer. In the Dinajpur district, correlation between the same is 0.4611 nearest to the significant value (0.5). We may conclude that, in the Northern Part of Bengal; the rice was commercialized but not like as the jute and tobacco.

3.4.7.2. Jute:

Jute was first developing as a major commercial crop after the Crimean War (1854-56)⁹. It basically produced for the external demand and linked with the world trade cycle. The steady rise, however, since the Crimean War the price of the fiber encouraged the *rayats* to cultivate it for export. Railway undoubtedly took an indispensable role to export the products from North Bengal to Calcutta orient jute factories. According to Hunter's observation, 'in 1870-71, the rate (rate of Jute) rose to Rs 5.8 per mound, the profits made were so large that considerable additions were at once made to the area under jute cultivation. The Collector estimates that during the year 1872, 192 square miles of the district area, was given up to jute'¹⁰. 'The Collector, in 1873, estimated that rather more than half the population of the Sirajganj Subdivision (Pabna District) , and about one-tenth of the population of the remainder district, are employed in Jute cultivation. The cost of production per acre may, according to the Collectors Report, be estimated at 12 *anas* for seed; Rs.3 for rent, Rs. 27 for labourer's wages; giving a total outlay of Rs.30.12 per acre. The produce from an acre of land under cultivation varies from 12 to 36 maunds; the average yield is estimated at seven maunds per *bigha*. The average price of jute of the best quality at Sirajganj during the ten years of ending 1872 was Rs. 4 per mound; medium quality Rs.3.8 per mound; inferior jute Rs. 3per mound'¹¹. According to Hunter's

observation, if we select average yield and the average price of medium quality jute per *bigha* then the net profit is $[(7 \times 3.8) - (30.12/3)]$ approximately Rs. 16.2 (more than 155% profit in respect of production cost) per *bigha*. Therefore, we may conclude that it was more profitable, and produced basically for the external demand. The foundation of railway extremely helped to commercialize the jute because of cheap transport cost, with high capacity and reliability.

According to another observation, cultivated area under the jute became doubled between the years 1901-2 and 1907-8. In many areas, this increase took place at the expense of food crops. In the regulation part within the Jalpaiguri district, for example, 25% of the area which previously cultivated *bhadori* rice came to grow jute by the first decade of the twentieth century¹². In the Rajshahi district, the area under cultivation remarkably increased which indicate the huge impact of the commercialization of agriculture. In 1872, the area under jute cultivation was only 14,000 *bighas*, while in 1873; it was as small as 6,000 acres. In 1914-15, the actual area was comparatively high; 121,500 acres. Though, the area under the crop fluctuates according to demand for the fiber and the prices obtained, but according to O'salley's observation normal area was not less than 86,000 acres undoubtedly, due to high profit the area of cultivation extensively increased in North Bengal¹³. In Pabna district, until 1865, the jute fiber was only grown on a very small scale for the local demand, and little or none was exported. The position was changed with the growing demand for the fiber in Europe, and cultivation expanded rapidly until in 1872, there was 1, 23,000 acres under the crop. Since then the area under cultivation has fluctuated according to the demand and the rate of prices, but the normal cropped area was 1, 26,000 acres in Pabna district. As said by O'Malley, 'jute is the crop of greatest economic importance in Pabna, for while the cultivator depends upon the rice harvest for food, he looks to the sale-proceeds of his jute to pay his rent and buy his little comfort'¹⁴. In 1884, Deputy Commissioner of Coochbehar state mentioned, the export-import trade in the state remarkably developed between the years 1864 to 1872 and turned into double due to the foundation of North Bengal State Railway¹⁵.

Table No.3.4.17
Comparative Export of Jute by Rail and River:1891-1921

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage of Railway
1891	4560275	49	4560324	99.99893
1892	3758880	490	3759370	99.98697
1893	4130901	40	4130941	99.99903
1894	5228554	471	5229025	99.99099
1895	5940319	0	5940319	100
1896	6133078	148	6133226	99.99759
1898	6152404	7	6152411	99.99989
1906-7	6277244	1590560	7867804	79.78394
1907-8	6721867	1210500	7932367	84.73974
1908-9	11414607	1210956	12625563	90.4087
1909-10	7720332	2741828	10462160	73.79291
1910-11	7501204	2212357	9713561	77.22404
1912-13	8321098	1583642	9904740	84.01127
1913-14	8647935	1458089	10106024	85.57208
1914-15	4912777	1055385	5968162	82.31642
1915-16	8499409	1076067	9575476	88.76226
1917-18	6352000	1097848	7449848	85.26348
1918-19	7424410	1543245	8967655	82.79099
1919-20	8061717	671160	8732877	92.31456
1920-21	8002675	816060	8818735	90.74629

Source: *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

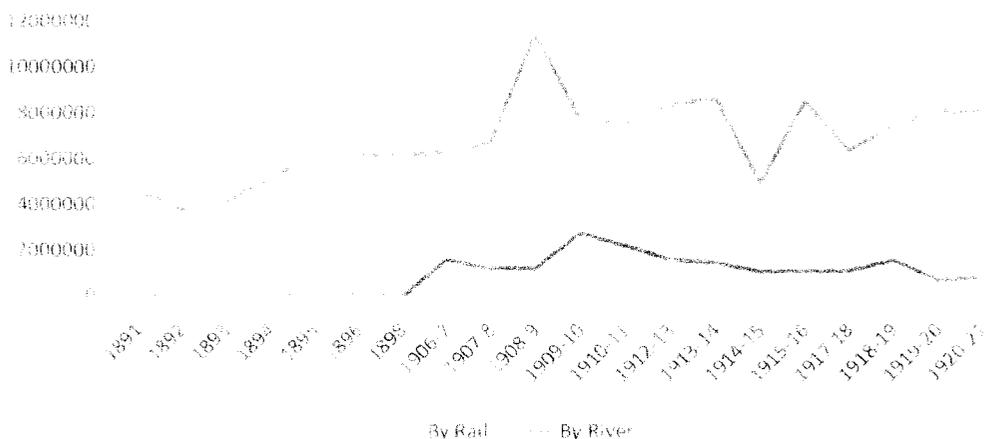
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The jute mainly would export to the adjacent factories of Calcutta. At the initial stage (1891-98), the role of river was very nominal because we don't have any data of the export to Calcutta. The year 1906 to 1921 exactly indicates the comparative role of the river and railway. The statistics from 1907 to 1921, that clearly indicates that the role of railway significantly increased and the river- export from North Bengal to Calcutta considerably decreased.

Table No.3.4.18

Comparative Export of Jute by Rail and River:1891-1921



Source: According to Table No.3.4.17

3.4.7.3.Tea:

The tea is the most important export item of North Bengal and the table below indicates the dominant role of the railway to export mainly from the Darjeeling and Jalpaiguri district of North Bengal. Here, we don't have any data on the river trade with Calcutta for the years 1891 to 1898 but after that we have available data for both the railway and river-export to Calcutta. The year 1906 to 1921, exactly indicates the dominant role of the railway where the role of river was very nominal. Due to partition of Bengal, the data from the Darjeeling district is not included in the total export from North Bengal for the years 1906 to 1911. We have separately analyzed the export trend from Darjeeling in the Table No.3.2 21. Except in the year 1920-21, the tea-export constantly increased from North Bengal due to international demand where the role of the railway was leading. We have also

calculated the export-value of tea, which calculated according to total exported quantity and value of Bengal.

Year	Export By Rail	Export By River	Total	Percentage of Railways	Approximate Value
1891	357957	2	357959	99.99944	NA
1892	351396	1	351397	99.99972	NA
1893	345767	0	345767	100	NA
1894	379876	2	379878	99.99947	NA
1895	389424	2	389426	99.99949	NA
1896	442112	9	442121	99.99796	NA
1898	492477	18	492495	99.99635	NA
1906-7	506644	30307	536951	94.35572	15571579
1907-8	508259	38498	546757	92.95885	18589738
1908-9	533565	23771	557336	95.73489	17844421
1909-10	599140	10289	609429	98.3117	21330015
1910-11	521008	29942	550950	94.56539	18732300
1912-13	769167	28811	797978	96.3895	28822520
1913-14	878049	38026	916075	95.84903	36048591
1914-15	979232	28295	1007527	97.19164	38706144
1915-16	961384	41157	1002541	95.89473	45536372
1917-18	1442779	24490	1467269	98.33091	56116040
1918-19	1177960	13132	1191092	98.89748	50472277
1919-20	1278288	18395	1296683	98.58138	53377847
1920-21	604269	9041	613310	98.52587	17164921

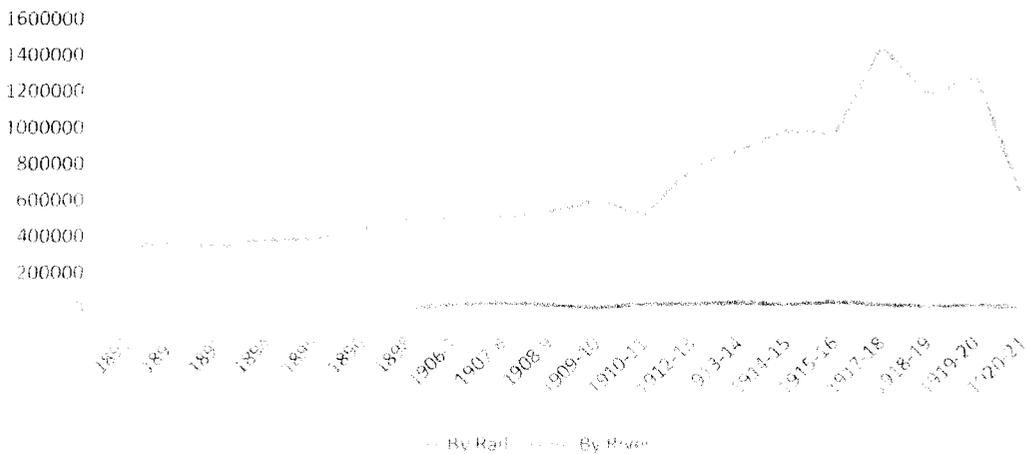
Source: *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

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Table No.3.4.20

Comparative Study of Tea Exported by Rail and River: 1891-1921



Source: According to Table No 3.4.19

The above graph notably indicates the constant growth of the tea-export from North Bengal up to the year 1917-18. The study, however, indicates, in the year 1920-21, the export highly reduced due to poor international demand. As a whole, the role of railway was dominant, where the role of the river relatively very irrelevant. The tea of North Bengal mostly exported to Calcutta for the global market, undoubtedly; the foundation of railway reduced the transport difficulties and helped to direct linked with worldwide market. Darjeeling and Jalpaiguri were the two major tea exporting districts of North Bengal. The table below separately discusses the trend toward the expansion of the tea plantation industry in the same districts.

Table No.3.4.21**Expansion of Tea Industry in Darjeeling and Jalpaiguri District:1866-1925**

(Quantity in Mounds: 82.2/7 lbs.)

Darjeeling District					
Sl. No.	Year	No. of Gardens	Area in Acre	Quantity in lbs.	Mounds
1	1866	39	10000	43300	526.2153
2	1870	56	11000	1700000	20659.72
3	1874	113	18888	3927911	47735.03
4	1885	175	88499	9090298	110472.4
5	1895	186	48692	11714551	142364.3
6	1905	148	50618	12447471	151271.3
7	1910	148	51281	14137500	171809.9
8	1915	148	54024	20203500	245528.6
9	1920	148	59356	15850000	192621.5
10	1925	148	59356	18732500	227651.9
Jalpaiguri District					
11	1876	13	818	29520	358.75
12	1881	55	6230	1027116	12482.31
13	1892	182	38583	18278628	222136.1
14	1901	235	76403	31087537	377799.9
15	1907	180	81338	45196894	549267.8
16	1911	191	90859	48820637	593306.4
17	1921	210	112688	43287187	583395.2
18	1931	191	132074	66441715	807451.4

Source: **For Sl.No.1 to 6:** O'Malley, Bengal District Gazetteers, Darjeeling, and Op.cit.p. 74

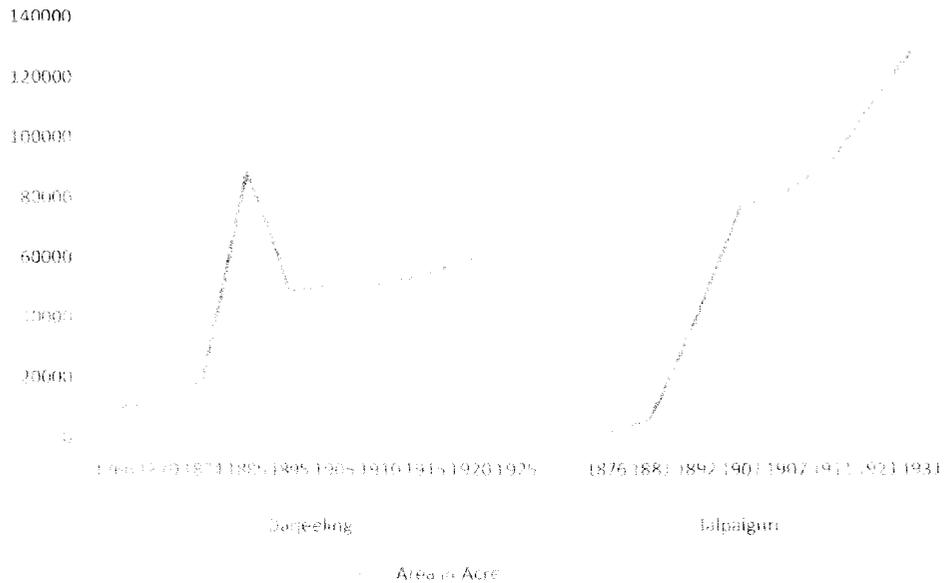
For Sl.No.7 to 10: J.A.Dash, Bengal District Gazetteers, Darjeeling, and Op.cit.p.114

For Sl.No.11to 15: J.F. Grunning, Eastern Bengal and Assam District Gazetteers , Jalpaiguri, Op.cit.p134-35.

For Sl.No.16to 18: Census of India 1921, Vol.5,Part 2,p.402, Census of India 1951,Vol.6, Part 1 A Report,p.623, Cited in Virginus Xaxa : Economic Dualism & Structure of Class Op.cit.p.10

Table No.3.4.22

Expansion of Tea Industry in Area (in Acre) in Darjeeling and Jalpaiguri District: 1866-1931

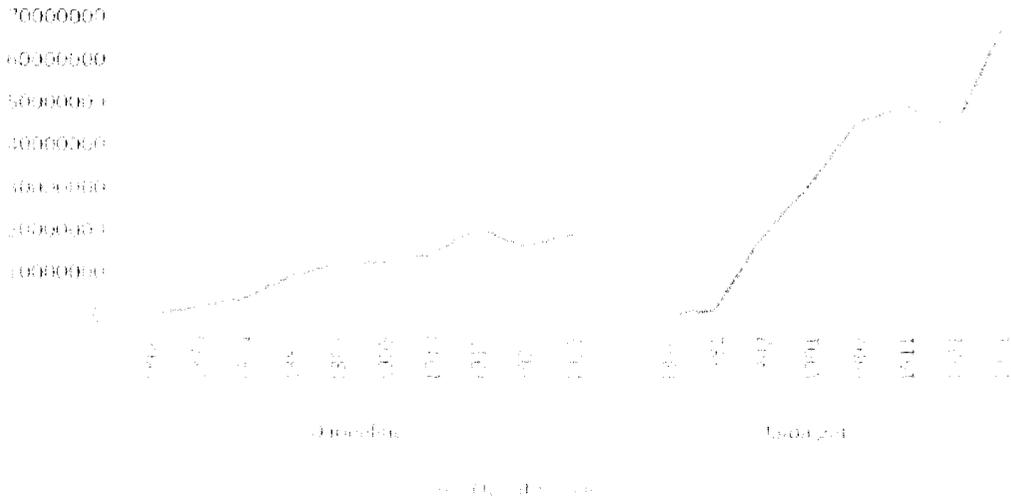


Source: According to Table No. 3.4.21

The above graph significantly indicates the trend toward the expansion of the cultivation area in acres. The study indicates cultivation area under Darjeeling district remarkably increased during the post railway period. Concerning the context, it is notable that North Bengal State Railway connected Siliguri in 1878 and the journey of the Darjeeling Himalayan Railway started from 23rd August, 1880. This accelerates the massive growth of the tea industry in area under cultivation. However, the growth stabled after 1895 and continued up to 1925. On 15th January 1893, the first railway line opened in Jalpaiguri district for the need of tea industry. The table points to enormous growth in the area under cultivation in Jalpaiguri district which continued up to 1931. Comparatively, the growth rate in Jalpaiguri was far better than Darjeeling district.

Table No.3.4.23

Development of Tea Production (Quantity in lbs.)in Darjeeling and Jalpaiguri District



Source: According to Table No 3.4.21

The graphical explanation of the Table No.3.4.23 as a whole specifies the constant growth of the production in both districts. However, the growth rate of the Jalpaiguri district is comparatively high from the Darjeeling. In Darjeeling district, the growth rate was moderately sluggish after the year 1895, but the Jalpaiguri district continued the massive growth up to 1931. As a whole, the total export from North Bengal remarkably continued up to the year 1919. Where, the Jalpaiguri and Darjeeling districts were the main tea productive districts.

3.4.7.4. Tobacco:

The tobacco was another important commercial agricultural product of North Bengal. It mainly produced at Jalpaiguri, Rangpur and Coochbehar state. The table evidently indicates the trend of the total export of the tobacco and the role of the railway.

Table No.3.4.24**Tobacco Exported from North Bengal By the Rail and River :1891-1921**

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage of Railways
1891	368623	53243	421866	87.37917
1892	477038	51421	528459	90.26963
1893	428080	44787	472867	90.52863
1894	436449	32036	468485	93.16179
1895	453564	53901	507465	89.37838
1896	511969	61958	573927	89.20455
1898	488852	94788	583640	83.75917
1906-7	315195	1788	316983	99.43593
1907-8	397481	331	397812	99.91679
1908-9	238313	1660	239973	99.30826
1909-10	280647	790	281437	99.7193
1910-11	331329	267	331596	99.91948
1912-13	182161	10360	192521	94.61877
1913-14	469203	17852	487055	96.33471
1914-15	356614	24812	381426	93.49494
1915-16	477724	3709	481433	99.22959
1917-18	348874	20778	369652	94.37904
1918-19	321941	59124	381065	84.48454
1919-20	547707	15342	563049	97.27519
1920-21	390771	19178	409949	95.32186

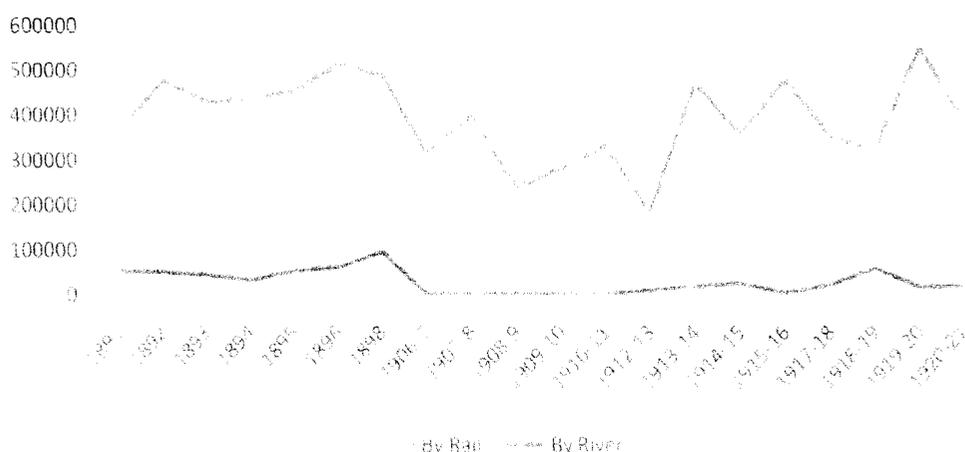
Source: *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

Report on the Trade Carried by Rail and River in Bengal the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta.(For Details See Reference No.6.)

Table No.3.4.25

Tobacco Exported by Rail and River:1891-1921



Source: Graph calculated According to Table No. 3.4.24

In Coochbehar state, the average production was five *maunds* per *bigha* and the average cost was Rs.4-6. The profit was Rs.12.5 per *bigha*¹⁶. Considerable quantities of tobacco also produced in the Rangpur and Jalpaiguri districts of North Bengal, which would export to Calcutta, and a large portion would ship to Burma¹⁷. In Jalpaiguri District, tobacco was a very valuable crop and grown largely in the Western Duars. The best tobacco land was the valley between the *Tista* and *Torsa River*. In the same, the yield from an acre of land was from six to eight maunds of tobacco, and the market prices were six to twelve rupees a mound. The average price of good tobacco was about eight rupee a mound¹⁸. According to our analysis, the river took an indispensable role at the initial stage, but the role of railway was vital and unparalleled with river to export the tobacco from North Bengal. In the year 1912-13, the export of the tobacco remarkably reduced but after that it again maintained a considerable increase.

3.4.7.5. Fruit and Vegetables:

The most important fruit and vegetables of North Bengal's were mango, orange, and potato. Here we don't have specific records of the individuals; instead, the table below signifies the export trend of the total fruit and vegetables for the selected years. Malda was famous for the mango product, and the cultivation developed extensively over the whole

district except in the *Barind* tract. It was one of the most important trades in the Malda district. Almost the entire crop would export to Calcutta and Eastern Bengal. Carter has noticed during the season the railway platforms would cover with blanket's field with mangoes. The boats would as well assemble at the Mahananda and Kalindri rivers, some of 500 mounds burthen to export the products to Eastern Bengal¹⁹. According to same observation, the owners of the gardens would make a profit when prices are good because the production cost was very negligible. *The Report on the Survey and Settlement Operation in the District of Malda, 1928-1935* indicates the total area of the mango garden was around 26,500 acre, and the value was about sixteen lakhs²⁰. Therefore, the product had a good commercial value. Mango gradually emerged as a commercial crop and considerably captured the area of mulberry cultivation.

Table No.3.4.26
Fruit and Vegetables Exported by the Rail and River from North Bengal:
1906-1921

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage of Railways	Approximate Value in Rs.
1906-7	7604	885	8489	89.57474	44440.53
1907-8	6550	630	7180	91.22563	38287.7
1908-9	18654	2693	21347	87.38464	116829.8
1909-10	10954	2485	13439	81.50904	79955.2
1910-11	35808	156	35964	99.56623	196811.5
1912-13	32388	11510	43898	73.78013	266930
1913-14	83403	8912	92315	90.3461	483380.7
1914-15	98129	16528	114657	85.58483	568153.4
1915-16	100126	11775	111901	89.47731	521945.6
1917-18	141165	18586	159751	88.36564	783083
1918-19	122275	6475	128750	94.97087	812610.2
1919-20	240049	16031	256080	93.73985	1727348
1920-21	224035	17046	241081	92.92935	1471161

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.*

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The orange was another important fruit of North Bengal mainly produced in the hilly track of the Darjeeling and Jalpaiguri district. O'Malley mentioned that the orange of the Darjeeling district had a delicious flavor, and large quantities were as well exported for the market. According to another observation, the orange was extremely profitable and due to that reason, the area of cultivation considerably expanded. The average cost of cultivation was not heavy that was near about rupees sixty per acre. The yearly average profit was remarkably high that varied Rs.3200 to Rs.4000 per acre²¹. O'Malley's another observation indicates the expansion of potato cultivation, and it was emerging as a commercial crop. 'The cultivation of the potatoes on the outskirts of the villages is extending, as the knowledge that this is a paying crop is spreading among the cultivators'²².

3.4.7.6. Gram & Pulse:

The gram & pulse was another chief commercial agricultural product of North Bengal. The table indicates a trend of the total export of the gram and pulse and the role of the railway. The table below indicates the river took a leading role to export the same product for the selected years (1906-7, 1914-15 and 1915-16). Even so, in average the entire export by the railway was dominant and increased constantly. Another important finding is that the total export quantities of the gram and pulse increased at the end of the second decade of the 20th century.

Table No.3.4.27

Gram &Pulse Exported By Rail and River from North Bengal:1906-1921

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage of Railways	Approximate Value in Rs.
1906-7	17106	15023	32129	53.24162	125744.1
1907-8	26291	3743	30034	87.53746	125430
1908-9	49254	6922	56176	87.67801	248853.2
1909-10	110579	15166	125745	87.93908	551623.1
1910-11	63559	10814	74373	85.45978	212457.2
1912-13	27974	12759	40733	68.6765	142729.1
1913-14	31832	19199	51031	62.37777	198872.1
1914-15	43467	57406	100873	43.09082	477678.9
1915-16	36774	54584	91358	40.25263	446761.2

1917-18	57465	16807	74272	77.37101	289384.5
1918-19	367612	37986	405598	90.63457	2463426
1919-20	365789	38569	404358	90.46167	3275441
1920-21	210893	31489	242382	87.00852	1695456

Source:

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

Report on the Trade Carried by Rail and River in Bengal the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta.(For Details See Reference No.7.)

3.4.7.7. Linseed:

The linseed was chief oil seed and important export product of North Bengal. The table indicates a trend of the total export of the linseed and the principal role of the railway. Except in the year 1898 and 1913-14, the export maintained stability, but in these two years, the export quantity considerably increased.

Table No.3.4.28

Linseed Exported by the Rail and River from North Bengal:1891-1921

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage of Railways	Approximate Value in Rs.
1891	48109	0	48109	100	NA
1892	21403	0	21403	100	NA
1893	43299	0	43299	100	NA
1894	54792	4	54796	99.9927	NA
1895	39068	0	39068	100	NA
1896	40325	0	40325	100	NA
1898	109169	24	109193	99.97802	NA
1906-7	17568	1754	19322	90.92226	108405.7
1907-8	31650	2139	33789	93.66954	158117.3
1908-9	18852	4135	22987	82.01157	115216.4
1909-10	38871	4752	43623	89.10666	228533.6
1910-11	61726	3185	64911	95.09328	440901.4
1912-13	63191	11419	74610	84.69508	555872.6
1913-14	73112	16876	89988	81.24639	535953.1
1914-15	44730	6653	51383	87.05214	339522.6

1915-16	15845	2999	18844	84.08512	110018.4
1917-18	13633	1820	15453	88.22235	95216.31
1918-19	41529	5416	46945	88.4631	363748.7
1919-20	38047	3177	41224	92.29332	467393.8
1920-21	61823	2781	64604	95.69531	792631.5

Source: *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

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3.4.7.8. Ginger:

Ginger partially used for daily consumption, and the rest of the amount exported to the external market. The product mainly would use as a spice. The railways dominantly exported the ginger and in average the percentage is near about hundred. However, the demand of the spice constantly was reducing after 2012-13. It happened probably due to spread of the ginger cultivation to the other provinces throughout the country.

Table No.3.4.29

Ginger Exported By the Rail and River from North Bengal: 1906-1921

(Quantity in Mounds: 82.2/7 lbs.)

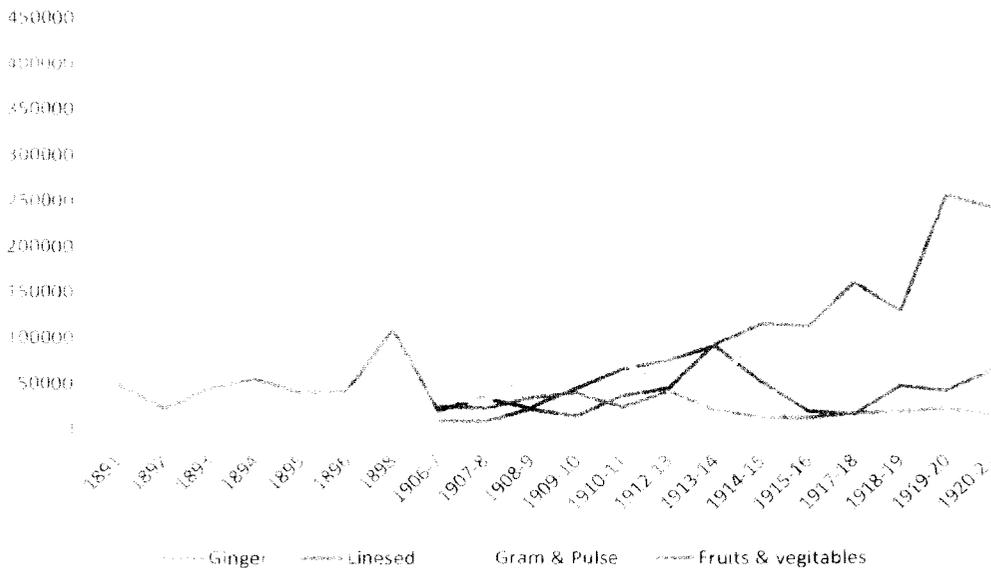
Year	By Rail	By River	Total	Percentage of Railways	Approximate Value in Rs.
1906-7	23665	35	23700	99.85	178885.1
1907-8	22351	0	22351	100	116571.7
1908-9	34006	17	34023	99.95	153975.4
1909-10	38994	7	39001	99.98	155155.9
1910-11	23323	4	23327	99.98	108402.5
1912-13	38602	1816	40418	95.50	403831
1913-14	20405	0	20405	100	181762.9
1914-15	11812	0	11812	100	97445.32
1915-16	11331	0	11331	100	95569.95
1917-18	16099	0	16099	100	120764
1918-19	18685	0	18685	100	139165.4
1919-20	21497	0	21497	100	200979.2
1920-21	14531	0	14531	100	185689

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office. Shillong.*

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Table No.3.4.30

Export Trend of the Selected Agriculture Products of North Bengal:1891-1921



Source: The graph prepared according to the Table No. 3.4.26, 3.4.27, 3.4.28 and 3.4.29.

The above graphical explanation specifies the table no: 3.4.26, 3.4.27, 3.4.28 and 3.4.29. The graph indicates the commercial growth in respect to the quantity of the products, exceptionally the demand of the ginger constantly reduced. It happened probably due to steady growth of the cultivation in other provinces of India. Linseed more or less maintained stability instead some fluctuations. The export of the other two products amazingly maintained a constant growth. The study as well indicates the huge export of gram and pulses in the years 1918-19 and 1919-20. The graph significantly indicates that the export of the fruit and veritable considerably increased due to massive export of mango, orange and potato from North Bengal.

3.4.7.9. Cardamoms:

This crop was a valuable one. It was difficult to calculate the cost of cultivation and consequently, the profit. Because most of the cost of the cultivation was mainly the labour rent, this was hard to calculate due to exchange labour system. Moreover, prices of the finished product were very erratically. It was, however, a crop which can give a very high return of profit²³. We have calculated the value of the cardamom according to the export value of Bengal. The quantity and value of the crop indicate the commercial importance of the product to the economy of North Bengal. It maintained a considerable growth even up to 1921.

Table No.3.4.31

Cardamoms Exported By the Rail and River from North Bengal: 1912-1921

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage of Railways	Approximate Value in Rs.
1906-7	NA	NA	1545	NA	NA
1907-8	NA	NA	855	NA	NA
1908-9	NA	NA	187	NA	NA
1909-10	NA	NA	1193	NA	NA
1910-11	NA	NA	1009	NA	NA
1912-13	17457	0	17457	100	2272214
1913-14	22403	0	22403	100	3474098
1914-15	11471	0	11471	100	1506974
1915-16	25424	0	25424	100	2934164
1917-18	27762	0	27762	100	2929230
1918-19	44042	1	44043	99.99	3656946
1919-20	23133	0	23133	100	1830398
1920-21	23078	0	23078	100	2226507

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam*, for the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

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3.4.7.10. Raw Silk:

Silk basically would produce at Malda and Rajshahi district of North Bengal. Until 1835, the East India Company had a monopoly of silk industry, but the exports reached their maximum level between 1866 and 1874. At that time, there were seven European concerns,

including the French establishment belonging to Louis Poyen and Cie of Lyons. It was estimated that these concerns produced 620 mounds of raw silk annually while the local people produced 1500 mounds, the total value being one and half lakhs. Thereafter, the export trade began to decline, owing to the increased demand for *tussore* and wild silks, and the commercial improvements which were being made in French and Japan²⁴. The table below significantly indicates the decline trend of the raw silk production which gradually lost the value as a commercial agriculture product due to competition with artificial and foreign silk. At the same time, Indian silk market was largely captured by Chinese and Japanese silk²⁵. Northern Bengal-silk undoubtedly failed to continue their global demand. The international communication system rapidly developed in the first half of the 20th century, for applying steam engine and modern technology, which integrated the global market. When the product like jute was flourishing for the development of international market and smooth communication system at the same time silk failed to compete with the global market. The silk, the most important commercial agriculture product of North Bengal ruined by the development of communication. At the same time, farmer had an option to select the products according to national and international market demand. In the second decade of the 19th century, there was strong competition was going on between mulberry and mango cultivation. According to G.E. Lambourn (1819), 'the profits from the cultivation have led within the last three decades to an extension of the area under mulberry, but they are rivaled by those from mango orchards'²⁶. It is interesting within one hundred years for the development of communication (mainly by the railway) silk failed to compete with the international market, and the cultivator selected mango as an alternative commercial crop. Thus, 'Indian agriculture became linked to world trade cycles. As a part of this linkage, farmers' decision about which crops to plant were affected by prices set in International markets; for example, agriculture began to commercialize'²⁷.

Table No.3.4.32

Silk Raw Indian Exported by the Rail and River from North Bengal:1906-1921

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage of Railways	Approximate Value in Rs.
1906-7	1593	2179	3772	42.23224	794973.1
1907-8	3661	2498	6159	59.44147	985440
1908-9	6442	1896	8338	77.26073	1360737
1909-10	1404	1269	2673	52.52525	428100.3
1910-11	1884	392	2276	82.7768	364231.1
1912-13	857	37	894	95.8613	578589.1
1913-14	406	0	406	100	264983.3

1914-15	719	0	719	100	471985.8
1915-16	1166	0	1166	100	878235.8
1917-18	340	0	340	100	256920.6
1918-19	400	0	400	100	320107.7
1919-20	295	0	295	100	236043.3
1920-21	2555	0	2555	100	2044057

Source:

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3.4.7.11. Turmeric:

We have available data on the export quantity of turmeric since 1891to 1921.The table considerably points toward the serious growth of the total export of the product. It undoubtedly emerged as an important commercial product of North Bengal. In compare to river the role of the railway was imperative and captured more 90% of the total export.

Table No.3.4.33

Turmeric Exported by the Rail and River from North Bengal:1891-98,1912-21

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage of Railways	Approximate Value in Rs.
1891	2972	227	3199	92.90403	NA
1892	7593	344	7937	95.66587	NA
1893	13712	103	13815	99.25443	NA
1894	7707	187	7894	97.63111	NA
1895	8962	105	9067	98.84195	NA
1896	14145	25	14170	99.82357	NA
1898	17339	19	17358	99.89054	NA
1906-7	NA	NA	41085	NA	NA
1907-8	NA	NA	41531	NA	NA
1908-9	NA	NA	27751	NA	NA
1909-10	NA	NA	43016	NA	NA

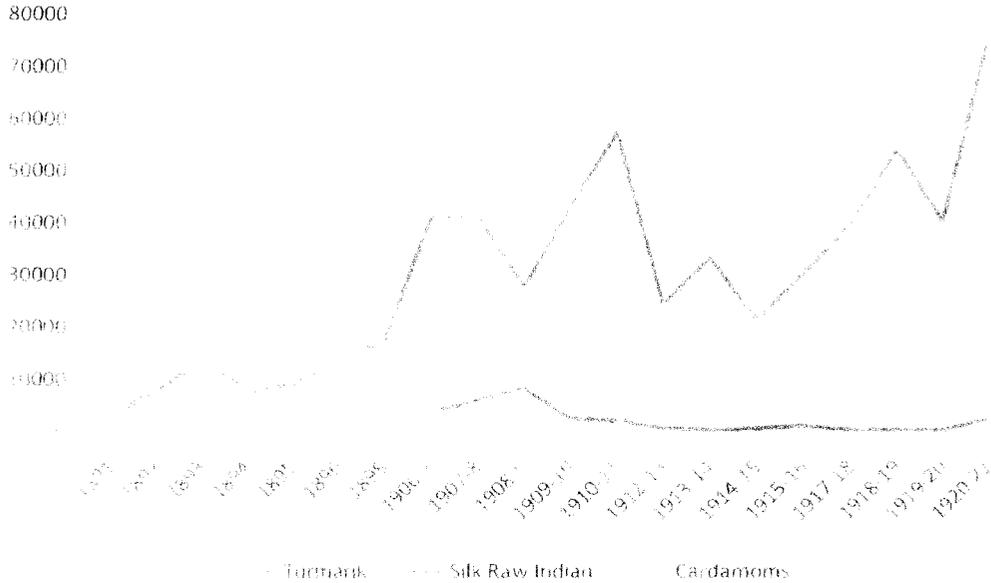
1910-11	NA	NA	57516	NA	NA
1912-13	22520	1856	24376	92.38595	235163.7
1913-14	30131	3299	33430	90.13162	311723.6
1914-15	20879	465	21344	97.8214	176521
1915-16	26459	3975	30434	86.93895	182586.6
1917-18	38373	1199	39572	96.97008	493750
1918-19	52481	1375	53856	97.4469	759207
1919-20	39992	171	40163	99.57423	555138
1920-21	74823	124	74947	99.83455	929290.4

Source: *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

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Table No.3.4.34

Export Trend of the Turmeric, Raw Silk and Cardamoms: 1891-1921



Source: According to Table No. 3.4.31, 3.4.32, 3.4.33

The railway undoubtedly took a significant role to export the agriculture products of North Bengal according to demand of intercontinental and national market. The above study significantly indicates that, the railway linked the agriculture products of North Bengal with the global market. The farmer benefited due to widening of the agriculture market by the higher cost of the crop. Undoubtedly, the products like jute, tobacco, tea remarkably exported due to huge global demand, and the products rose as an important commercial crop of North Bengal. At the same time, due to quick development of the communication system the silk, one of the most important profits making products of North Bengal gradually ruined and failed to protect from the worldwide market struggle. At the same time, the gradual decline of the river traffic accurately indicates the need of smooth, certain and rapid communication for the growing worldwide export-import trade.

- ¹ . John Hurd: *Railways, Railways in Modern in India*, Ed. Ian J. Ker. Oxford University Press, 2001,p.157
- ² . S.C. Ghose: *A Monograph on Indian Railway Rates* , Superintendent Government Printing , Calcutta 1918,p.iii
- ³ . Rice trade in the 'Rice bowl of Bengal': Burdwan 1880-1947, Achintya Kumar Dutta, *Indian Economic Social History Review* 2012 49: 73, DOI: 10.1177/001946461104900103,p75.
- ⁴ . Chaudhuri, Binay Bhusan. 'Growth of Commercial Agriculture in Bengal—1859–1885', *Indian Economic and Social History Review*, Vol. VII (1), 1970, pp. 31-39

5

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st March 1891,	Statement No. II, p. liii. Statement No. III, p. lxxv. Statement No. B, p. xvii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th June 1891,	Statement No. II, p. liii. Statement No. III, p. lxxv. Statement No. B, p. xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th Sept 1891,	Statement No. II, p. liii. Statement No. III, p. lxxv. Statement No. B, p. xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st Dec.1891,	Statement No. II, p. liii. Statement No. III, p. lxxv. Statement No. B, p. xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st March 1892,	Statement No. II, p. liii. Statement No. III, p. lxxv. Statement No. B, p. xvii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th June 1892,	Statement No. II, p. lv. Statement No. III, p. lxxv. Statement No. B, p. xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th Sept.1892,	Statement No. II, p. lv. Statement No. III, p. lxxv. Statement No. B, p. xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st Dec.,1892	Statement No. II, p. lix. Statement No. III, p. lxxi. Statement No. B, p. xvi.
Return of the Rail and River-Borne Trade		Statement No. II, p. lv.

of Bengal During the Quarter Ending the	March ,1893,	Statement No. III, p. lxvii. *Statement No. B, p. xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June, 1893,	Statement No. II, p. liii. Statement No. III, p. lxv. Statement No. B, p. xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1893,	Statement No. II, p. lv. Statement No. III, p. lxvi. Statement No. B, p. xvi.
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Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1907-08,	Statement No. I, p. xxi. Statement No. II, p. xxxv. Statement No. III, p. liii. Statement No. IV, p. lxxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1908-09,	Statement No. I, p. xxi. Statement No. II, p. xxxv. Statement No. III, p. liii. Statement No. IV, p. lxxvii.
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		Statement No. IV, p. lxiii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1910-11,	Statement No. I, p. xxi. Statement No. II, p. xxxv. Statement No. III, p. li. Statement No. IV, p. lxxv.
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Report on the Trade Carried by Rail and River in Bengal, BSBBD, Calcutta,	1913-14,	Statement No. I, p. 22. Statement No. II, p. 42. Statement No. III, p. 61. Statement No. IV, p. 78.
Report on the Trade Carried by Rail and River in Bengal, BSBBD, Calcutta,	1914-15,	Statement No. I, p. 24. Statement No. II, p. 44. Statement No. III, p. 63. Statement No. IV, p. 80.
Report on the Trade Carried by Rail and River in Bengal, BSBBD, Calcutta,	1915-16,	Statement No. I, p. 29. Statement No. II, p. 55. Statement No. III, p. 70. Statement No. IV, p. 86.
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6. Report on the Administration of Bengal , 1871-72, Part 1,Part 2,Secretariate Press, Calcutta, 1872,p.123

7.

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st March 1891,	Statement No. II, pp. XXX - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvii.
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Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1894,	Statement No. II, pp. xxxi - lvii. Statement No. III, pp. lviii - lxxix. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1894.	Statement No. II, pp. xxxi - iv. Statement No. III, pp. lvi - lxxvii. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1894,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1895,	Statement No. II, pp. xxxv - lxi. Statement No. III, pp. lxii - lxxiii. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1895.	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1895,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1895,	Statement No. II, pp. xxxi - lvi. Statement No. III, pp. lviii - lxxix. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March 1896.	Statement No. II, pp. xl - lxxiii. Statement No. III, pp. lxiv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1896,	Statement No. II, pp. xxxi - lxxv. Statement No. III, pp. lxxvii - lxxxix. Statement No. B, pp. ix - xviii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1896,	Statement No. II, pp. xxx - lxi. Statement No. III, pp. lxiv - lxxv. Statement No. B, pp. ix - xviii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1896,	Statement No. II, pp. xxxv - lxxix. Statement No. III, pp. lxxii - lxxxiv. Statement No. B, pp. ix - xix.

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1898,	Statement No. II, pp. xlii - lxxvii Statement No. III, pp. lxxx - xcii. Statement No. B, pp. ciii - cxiii
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June, 1898,	Statement No. II, pp. xliv - lxxix. Statement No. III, pp. lxxx - xciv. Statement No. B, pp. civ - cxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept. 1898,	Statement No. II, pp. xliv - lxxix. Statement No. III, pp. lxxx - xciv. Statement No. B, pp. civ - cxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec, 1898,	Statement No. II, pp. xlvi - lxxxiii. Statement No. III, pp. lxxx - xcvi. Statement No. B, pp. cx - cxxxi.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1906-07,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - liii. Statement No. IV, pp. liv - lxxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1907-08,	Statement No. I, pp. i - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - liii. Statement No. IV, pp. liv - lxxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1908-09,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - liii. Statement No. IV, pp. liv - lxxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1909-10,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - li. Statement No. IV, pp. lii - lxxiii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1910-11,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - li. Statement No. IV, pp. lii - lxxv.
Report on the Trade Carried by Rail and River in Bengal, BSB, Calcutta,	1912-13,	Statement No. I, pp. 1 - 18. Statement No. II, pp. 19 - 38. Statement No. III, pp. 39 - 57. Statement No. IV, pp. 58 - 74.

Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1913-14,	Statement No. I, pp. 5 - 22. Statement No. II, pp. 23 - 42. Statement No. III, pp. 43 - 61. Statement No. IV, pp. 62 - 78.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1914-15,	Statement No. I, pp. 7 - 24. Statement No. II, pp. 25 - 44. Statement No. III, pp. 45 - 63. Statement No. IV, pp. 64 - 80.
Report on the Trade Carried by Rail and River in Bengal, BSBD, Calcutta,	1915-16,	Statement No. I, pp. 7 - 29. Statement No. II, pp. 30 - 55. Statement No. III, pp. 56 - 70. Statement No. IV, pp. 71 - 86.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1917-18,	Statement No. I, pp. 7 - 29. Statement No. II, pp. 30 - 55. Statement No. III, pp. 56 - 70. Statement No. IV, pp. 71 - 86.
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Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1920-21	Statement No. I, pp. 7 - 31. Statement No. II, pp. 32 - 57. Statement No. III, pp. 58 - 72. Statement No. IV, pp. 73 - 88.

⁸ . Rice trade in the 'Rice bowl of Bengal': Burdwan 1880-1947, Achintya Kumar Dutta, *Indian Economic Social History Review* 2012 49: 73, DOI: 10.1177/001946461104900103,p.75.

⁹ .Benoy Chowdhury : Growth of Commercial Agriculture in Bengal (1757-1900), vol.1, Lecture in History, Calcutta University, Indian Studies, Past and Present,Calcutta,1964,p.ii.

¹⁰ . Hunter, SAB, Pabna, Op, cit pp. 275,303.

¹¹ . Hunter, SAB, Pabna, Op, cit, p.304.

¹² .J.F. Gruning , Op,cit.p.60.

-
- ¹³ O'Malley, Bengal District Gazetteers Rajshahi ,Bengal Secretariat Book Depot, Calcutta,1916,pp..81-82.
- ¹⁴ . O'Malley, Bengal District Gazetteers, Pabna, Op cit p.52
- ¹⁵ . Krisnendu Day : Coochbeharer Babsaya o Baniya: Sekal –Ekal, in Ananda Gopal Ghosh (ed.), Madhuparni,Coochbehar Issue, Calcutta,1990,p.177. (Bengali)
- ¹⁶ . Chaouddhury,Hrendra Narayan :The Coochbehar State an it's Land Revenue Settlement, Coochbehar: C.B.S.Prees,1903.pp.170,493,494.
- ¹⁷ . Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam: EBASP, Shilong, p.4.
- ¹⁸ . J.F. Gruning , Op,cit.p.80.
- ¹⁹ . M.O. Carter., Op cit.pp.24-25
- ²⁰ . M.O. Carter., Op cit.p.25.
- ²¹ . A.J. Dash, Bengal District Gazetteers Darjeeling. Op.cit.p.106
- ²² . O'Malley, Bengal District Gazetteers Rajshahi, Op.cit.p.85
- ²³ . A.J. Dash, Bengal District Gazetteers Darjeeling. Op.cit.pp.105-6
- ²⁴ . M.O. Carter., Op cit.p.19.
- ²⁵ . M.O. Carter., Op cit.p.23
- ²⁶ . G.E.Lambourn :Bengal District Gazetteers Malda, The Bengal Secretariate Book Depot Calcutta, 1819 reprinted by N.L. Publishers, Siliguri,p.49.
- ²⁷ . John Hurd: *Railways*, Railways in Modern in India, Ed. Ian J. Ker. Oxford University Press, 2001,p.157

Chapter No. 3.5

Railways : Industrialization and De-industrialization in North Bengal:

3.5. Railways : Industrialization and De-industrialization in North Bengal:

3.5.1. Railways and Industrialization in North Bengal:

Railways in India were positioned differently as compared to many other countries where the network had entered. In England, the building of railroads fueled a new phase of its Industrial Revolution, with large infusions of capital and the development of new industry in the form of steel production and coal mining; therefore, in this context, the construction of the railway in India was vital. It is also argued that the Industrial Revolution had vast capacity to absorb capital, and helping in the creation of a surplus, and the railway in India, helped to balance the British trade deficit. In Indian context, railways were to fulfill first the demands of the imperial power. It was obvious. Therefore, that in the initial years, there was not any introductory plan to the development of the domestic economy. Consequently, it was not surprising that stress on building strong linkages between the railways and other key sector of the economy was not predominant. Obviously, Indian industry and economy did not experience the same force from the foundation of railways that other countries like England had become familiar with. There were several reasons for this. In India, locomotives, equipments, iron and steel for bridges and structures, rails, and sleepers, were almost entirely supplied from outside the country. After some time, the policy was, to some extent, changed. Some of the simpler items of like sleepers, bolts etc. began to indigenously manufacture. However, more technology intensive like, locomotives continued to import chiefly from Great Britain¹.

The process of industrialization does not only depend on the factors of communication, but it is a unique feature to develop the industry in any particular region. According to early nationalist scholars, the Railways were used by the Colonial authority as a medium to collect the raw material and to sell the finished goods. G.V. Joshi observed in 1888 that the economic result of railways had been 'very detrimental to the varied growth of the nation's industrial activity' and condemned 'their tendency to prevent, in a country like India, a healthy material advance on normal lines'². The plain of Northern Bengal is highly fertile for cultivation, and the hilly *Tarai* is also appropriate for the development of plantation industry. There was a very thin probability of heavy industries like Bombay and Calcutta industrial belt, due to the absence of sufficient essential criteria. Another important observation is that the increase of money in the hands of the grain merchants had additional consequences for non-agricultural enterprises. Tirthankar Roy comments that commercialization stimulated modern small industry in India, leading to the growth of towns that had large spot markets and settlement of merchants. These towns saw the growth of small-scale industries such as rice and oil mills, sugar mills, cotton gins, etc., in the inter war period³.

3.5.2. Nature of industrial development in North Bengal:

Now we have to test the both arguments in respect of North Bengal. If we study the list of factories in the districts of Northern Bengal, which indicates the tendencies and nature of industrial development in the North Bengal up to 31st May, 1935.

Table No: 3.5.1
Name of the Registered Industries in North Bengal
(Up to 31st May 1935)

Name of the District	1.	2.	3.	4.	5.	6.	7.
	Railway Engineering	Railway workshop	Jute Presses	Hosiery	Rice mills	Sugar	General Engineering
Pabna	1	-	5	6	2	-	-
Malda	-	-	-	-	2	1	-
Bogra	-	-	-	-	2	-	-
Rajshahi	-	-	3	-	2	3	1
Rangpur	2	2	4	-	-	-	-
Dinajpur	-	-	1	-	29	1	-
Jalpaiguri	-	1	2	-	1	1	1
Darjeeling	-	1	3	-	5	-	1
TOTAL	3	4	18	6	43	6	3

Name of the District	8.	9.	10.	11.	12.	13.	14.	District Total
	Oil mills	Tea	Matches	Saw Mills	Printing Presses	Quinine	Carpentry and Cabinet making	
Pabna	-	-	-	-	-	-	-	14
Malda	-	-	-	-	-	-	-	3
Bogra	-	-	-	-	-	-	-	2
Rajshahi	-	-	-	-	-	-	-	9
Rangpur	-	-	-	-	-	-	-	8
Dinajpur	1	-	-	-	-	-	-	32
Jalpaiguri	-	149	1	1	-	-	-	157
Darjeeling	-	128	-	1	1	1	1	142
TOTAL	1	277	1	2	1	1	1	367

Source: *Classified List of Factories in Bengal, Registered under the Factories Act, Corrected up to 31st May 1935, Part: 1, by Office of the Chief Inspector of Factories, Bengal, Bengal Government Press, Alipore, 1935, pp.135-62.*

According to the list of factories by the Chief Inspector of Factories in Bengal, out of 367 registered factories 277 were tea factories, which indicate that 75.47% of the total enrolled factories of the North Bengal belonged to tea factory. We have already discussed the growing export quantity of the tea in the Chapter No.3.4.7.3. The same chapter clearly indicates the expansion of tea industry in North Bengal. The second important factory was rice mill; total 43 rice mills were continuing up to May, 1935; in-between 29 factories were in the district of Dinajpur. Jute industry, basically jute press factories remarkably developed in the districts of North Bengal. The Landale and Clarke Ltd. and Ralli Brothers Ltd, were the two important companies they had each five factories in the Northern Bengal. R. Sim & Co.'s Jute Press had three factories in the same region⁴. According to Hunter, at the end of the 19th century only one factory was running in the Pabna district. It was situated at Machimpur, near Sirajganj, and was the property of the Sirajganj Jute Company. This company took a vital role to make the gunny- bags and cloth. According to the report of the 31st March 1984, indicates that the export quantity remarkably increased mostly from the Sirajganj Jute mill to Calcutta. 42330 mounds jute exported from the Northern Bengal to Calcutta, which 69.82% more from the last quarterly export quantity⁵. This factory created the scope of employment to a large number of men, women, and children; about 358 women 333 children employed in preparing, spinning, and weaving jute⁶. In 1923, number of employee remarkably increased, altogether 2100 men employed under jute press industries in the Pabna districts, but the strength of labour force largely varied according to season⁷. Later, five factories were running in the same districts, and total 18 jute industries took essential part to accelerate the scope of employment in the Northern Bengal.

The table below indicates the development of the jute industry in North Bengal and the role of railway to export the gunny bags and cloth. However, here it is difficult to identify the exact export of the new gunny bags and cloth, because the export, at the same time, also represents the empty bags returned from the North Bengal⁸. It is notable for the end of the 19th century the production of gunny bags and cloth was comparatively better but gradually the production reduced. At the beginning of the 20th century to second decade of the same, probably the factories of Northern Bengal concentrated more on the jute pressing to export the raw jute to Calcutta than the producing of the gunny bags and cloth. So, the production of gunny bags and cloth significantly declined because the product exported to overseas market from Calcutta, and the jute mills were mainly centered in the adjacent area of Calcutta (24th Pargana, Howrah and Hooghly).

Table No: 3.5.2**Gunny Bags & Cloth Exported From North Bengal:1891-1921**

(Quantity in Mounds: 82.2/7 lbs.)

Year	By Rail	By River	Total	Percentage of Rail	Total Value
1891	439220	1179	440399	99.73229	NA
1892	342510	1167	343677	99.66044	NA
1893	354000	1220	355220	99.65655	NA
1894	170063	681	170744	99.60116	NA
1895	386558	1384	387942	99.64325	NA
1896	307587	2533	310120	99.18322	NA
1898	100954	235	101189	99.76776	NA
1906-7	46183	6192	52375	88.17757	780507.4
1907-8	49010	5771	54781	89.46533	726511.9
1908-9	62772	1868	64640	97.11015	828848.5
1909-10	83703	2131	85834	97.5173	1024084
1910-11	60563	2037	62600	96.74601	624843.9
1912-13	45503	955	46458	97.94438	799075.4
1913-14	27801	1147	28948	96.03772	405065.7
1914-15	76345	1645	77990	97.89076	1027395
1915-16	98094	2544	100638	97.47213	1126795
1917-18	98746	1079	99825	98.91911	1628304
1918-19	44091	1143	45234	97.47314	1093041
1919-20	54976	1238	56214	97.7977	1317429
1920-21	43724	797	44521	98.20983	857011.3

Source: *Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

Report on the Trade Carried by Rail and River in Bengal the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta⁹.

Before the railway, virtually no modern industry existed in North Bengal. By transporting raw material at lower cost and carrying finished goods to the internal market railway took an essential role in the growth of modern industry like hosiery. In 1920, only

three hosiery factories were successfully continuing in North Bengal, and the products exported to most part of Bengal. However, the companies were unable to cope the excessive demand¹⁰. In 1935, hosiery industries remarkably developed in the North Bengal, and all the industries situated in Pabna district. O'Malley's account helps us to draw the picture of the growth and development of the hosiery industry in Pabna district:

“The manufacture of hosiery is an industry of recent growth, Hosiery, which has with good prospects before it. There are two hosiery factories at Pabna, one known as the Pabna Hosiery Co. and the other as the Pabna Shilpa Sanjibani Co. Ltd. The Pabna Hosiery Co. is a private concern owned by the Tantiband zamindars. The Pabna Shilpa Sanjibani Co. is a limited liability company with a registered capital of 2 lakhs : Rs. 75,000 has been paid up in 750 shares of Rs. 100 each. A third hosiery factory, known as the Banga Bijay Factory, was started at Sirajganj in 1920 by a private firm owned by Babus Sashi Bhushan Sarkar and Kanai Bihari Sarkar of the Bogra district. The largest and most important concern is that of the Pabna Shilpa Sanjibani Co., which was started in 1905 and has been very successful, paying dividends of 15 percent, in 1918, of 35 percent in 1919 and of 25 per cent, in 1920. Its annual outturn is reported to be 7,000 dozen vests (banians), 300 dozen socks and 100 dozen sweaters. The factory exports its products to most places in Bengal and at present is unable to cope with the demand. The total number of men employed is about 70 and nearly all the machines are driven by steam power. The outturn of the Pabna Hosiery Co. is about 10 dozen vests a day:it employs about 20 men, and almost all the machines are driven by oil engines¹¹”.

Clearly, the development of industries in North Bengal was dominantly plantation and agriculture based where the production of tea, jute, tobacco and rice were remarkable (see the Chapter No.3.4.7). The jute and tobacco extremely exported into Calcutta (see the Chapter No.3.4.7.2 and 3.4.7.4), which helped to develop the jute and tobacco industries in the Calcutta adjacent region. Unquestionably, railway took the essential role to build a bridge between production and industrial zone by regular, smooth and certain communication capability. It is remarkable that the foundation of railway and jute mill in Calcutta introduced in the same year, 1854¹². Up to 1935 in Calcutta and adjacent area, there were 130 jutes and five tobacco factories were continuing, both highly depend on the raw products of Northern Bengal.

Table No.3.5.3

Jute & Tobacco Factories in Calcutta, 24th Pargana, Howrah and Hooghly

Districts	Jute press	Jute mill	Tobacco	Total
Calcutta	2		1	
24th Pargana	24	55	3	
Howrah	9	24	1	
Hooghly		16		
Total	35	95	5	135

Source: *Classified List of Factories in Bengal, Registered under the Factories Act, Corrected up to 31st May 1935, Part: 1, by the Office of the Chief Inspector of Factories, Bengal, Bengal Government Press, Alipore, 1935, pp. 1-95.*

The decline in transport costs also had an impact in the non- agricultural sector. In some regions, it caused output and employment in certain occupations to expand, in others to contract. The transport sector itself illustrates this synchronous expansion and contraction. Railways required so many workers that by the late nineteenth century, they constituted the largest single employer within the modern sector of the economy. By 1865, when Indian industry was still in the fetal stage, railways employed 34,000 workers in the running of the system; in 1895, 273,000 workers were employed; prior to the great depression, the number of workers had reached 790,000, a figure that was stable until the Second World War when employment rose again; by 1946-47 railway, employees numbered 1,047,000. However, at the same time railways were creating jobs; they were the cause of the loss of jobs to many owners and operators of alternative means of long-distance transport who found themselves unable to compete with railways. Nevertheless, since cart men and boatmen continued to be needed to take goods to and from the railways, the sheer increase in the volume of goods being shipped within the subcontinent may have generated as many new jobs in the transport sector as were lost¹³.

The railway itself took a mandatory role to develop few engineering and workshop factories for their own requirement. Seven engineering and workshop factories took the essential role to create the employment opportunities in North Bengal. More than thousands workers were employed in these factories. The District Census Handbook, Jalpiguri 1951, indicates nearly thousand workmen employed under the Bengal Doors Railway Workshop at Domohani, Jalpaiguri¹⁴. Number of officials and railway polices as well engaged in Coochbehar state, which enriched the scope of employment in the Coochbehar state¹⁵. How much were the natives employed and alienated? This is very important question. Because we see the foundation of railway in North Bengal was impossible without the contribution of the lower-class coolie from Bihar and Chotonagpur.

	Name of the Factories	Place	District
1	Eastern Bengal Railway Marine Workshop and Dock	Paksey,	Pabna
2	Eastern Bengal Railway Saidpur Train Lighting Shops	Saidpur	Rangpur
3	Eastern Bengal Railway Power House	Saidpur	Rangpur
4	Eastern Bengal Railway Loco.Carriage and Wagon Workshop	Saidpur	Rangpur
5	Eastern Bengal Railway Lalmonirhat Running Shed and Repairing Workshop	Lalmonirhat	Rangpur
6	Bengal Dooars Railway Workshop	Domohani	Jalpaiguri
7	Darjeeling Himalayan Railway Locomotive, Carriage and Wagon Workshop	Tindharia	Darjeeling

Source: *Classified List of Factories in Bnegal, Registered under the Factories Act, Corrected up to 31st May 1935, Part: 1, by Office of the Chief Inspector of Factories, Bengal, Bengal Government Press, Alipore, 1935, pp.135, 141, 152, 161*

3.5.3. DE- INDUSTRIALIZATION AND RAILWAYS IN NORTH BENGAL:

There are different views regarding the process and nature of the de-industrialization in India. One school of thought presented by Daniel Thorner's tends to argue that de-industrialization might have appeared in the early 19th century and the early 20th century¹⁶. U.S. scholar, Morris D. Morris, however, argues that the de-industrialization itself was a myth since it did not take place even in the 19th century. According to Morris, had there been de-industrialization, village handicraft would not have survived long¹⁷. Unfortunately, his arguments were more hypothetical and dubious. Nationalists like R.C.Dutta, M.M. Malabya relied heavily on statistics of external trade to indicate a collapse in traditional Indian textile exports and a rapid increase in foreign imports, but these do not constitute a definite proof of decline in collective internal production¹⁸. Amiya Bagchi studied a careful statistical comparison of Buchanan Hamilton's survey of a number of Bihar districts in the early 19th century with the 1901 census data. His major findings are the decline in the percentage of population dependent on industries from 18% to 8%, and a massive fall in the number of cotton spinners and weavers¹⁹.

David Clingingsmith, Jeffrey G. Williamson studied whether the de-industrialization shocks and responses were big or small is then assessed by comparisons of the Indian experience with other parts of the periphery. According to their study, 'India

reindustrialized between 1750 and 1860, and two main epochs, with very different de-industrialization causes, distinguish that century. The first epoch runs from about 1750 to 1810 and was an indirect result of the dissolution of the Mughal Empire. As central authority waned, revenue farming expanded, the rent burden increased, warfare raised the price of agricultural inputs, and regional trade within the subcontinent declined, all serving to drive down the productivity of food grain agriculture. Grain prices rose, and gave that ordinary worker lived near subsistence; the nominal wage rose as well. As a consequence, the own wage in Indian textile manufactures increased, hurting India's competitiveness in the export market.' 'By 1860, India completed a century-long two-part transition from being a net exporter to a net importer of textiles. A secular rise in the terms of trade stopped, turned around, and started a long-run fall that lasted until the late 1930s. A deterioration in the terms of trade meant that the import competing sector (textiles) was no longer being penalized by unfavorable external price shocks. By the late 19th century, India's de-industrialization was over, and the country began a period of slow reindustrialization²⁰. Author has also reviewed the arguments of Amiya Bagchi. Table No. 3.5.15 significantly indicates the decline trend of the dependent on handloom industries. The Table No.3.5.14 as well indicates the slow reindustrialization trend in India after 1913.

According to Hurd, 'In the manufacturing sector the effects of railways on output and employment were equally mixed. Before railways virtually no modern industry existed in India. By transporting raw materials at lower cost and carrying finished goods to internal markets, railways played a major role in the growth of India's modern industry. That this growth was extremely limited, however, is evidenced by the fact that the percentage of the total workforce employed in industry did not increase before the Second World War. There was, nevertheless, a sizeable absolute increase. The number of workers employed in modern industry went from c. 400,000 in 1900 to c. 2 million by 1938. Whether this increase was accompanied by corresponding losses in employment in the more labour-intensive traditional manufacturing industries, whether in rural or urban areas, is *an* issue that is far from settled. There is no doubt that with that introduction of railways local industries which had been sheltered from competition by the high costs of transport were forced to compete with industries outside the local region. An example is the handloom industry, a major source of employment in the pre-railway era. Some argue that railways caused a decline in handlooms by making imported and Indian-made factory cloth available at prices lower than local weavers could charge. Others maintain that the market position of handloom cloth was actually strengthened by the railways due to the new availability of low-priced factory-made yarns and that the number of weavers did not decline. It is certainly possible that inputs brought in by rail assisted small-scale and cottage industries by lowering costs. If this is true, the losses in employment in traditional industries may have been small and offset by the gains in modern industries'²¹.

Hurd also argues, 'whatever the absolute gain or loss in non-agricultural employment, in net terms railways did not alter the composition of the labour force in the major sectors of non-agriculture—i.e. at the all-India level approximately the same percentage of total workers was employed in trade, industry, and services at the beginning of the period under consideration as at the end. Similarly, the proportion of workers in agriculture and non-agriculture did not alter significantly, and India remained a predominantly agricultural country'²².

According to another observation, 'village craft in the interior, and particularly, in regions other than eastern India where British penetration was earliest and deepest, probably survived much longer, coming to be seriously affected only with the spread of railways.'²³

Raghavendra Chattopadhyay in his article highly traced on the regional imbalance in Indian process of industrialization and de-industrialization. While the Bengal Presidency area follows the same pattern of de-industrialization as India as a whole, when the Presidency area is disaggregated into its three constituent provinces, the provinces of Bihar and Orissa are seen to have suffered from de-industrialization during the period studied the author, and the Province of Bengal stands out as the newly industrializing area, notwithstanding the destruction of traditional industries. Bihar and Orissa, hinterlands in the industrial map of colonial India, followed the familiar pattern of de-industrialization and their rate of deceleration was so high as to more than offset the industrialization of Bengal province. Bengal and Bombay were taking shape as the new industrially developed regions. These pockets did not, however, have any significant 'spread effect' for the rest of India. This paper studies the situation in Bengal Presidency as a test case. While Bengal and Bombay suffered from a cyclical downturn in industry in the late 1920s, the impact of the Depression in the industrial sector appears to have been limited to these two areas only. There was no sign of depression in the modern industrial field in Madras. Study of this phenomenon is likely to throw up new facts pertaining to India's industrial history²⁴

3.5.4. Impact on Handloom Industry:

In order to calculate the role of railway in the process de-industrialization in North Bengal, we evaluate the export-import report of the cotton manufactured and cotton twist and yarn to find out the trend of the de-industrialization. Before going to analyze the Table No.3.5.5, we have to consider few limitations of the study. We don't have any data of river traffic from the years 1891 to 1898, to study the import from Calcutta. Cotton products mainly used to import in North Bengal from England and Bombay via Calcutta. Thus, the table below not reflects the role of the river for the mentioned period (1891-98). However, after 1898, we have available data for both the traffic to study the comparative role of the

river and railway to import the European cotton twist and yarn. In the same table, for the years 1906 to 1911, we have used the data excluding the Darjeeling district and Coochbehar state.

Table No.3.5.5

**Comparative role of River and Railway to Import the Cotton
Manufactured Twist &Yarn**

(Quantity in Mounds: 82.2/7 lbs.)

Year	Twist &Yarn{European}			Twist &Yarn{Indian}		
	All Quantity in Mounds		Total	All Quantity in Mounds		Total
	By Rail	By River		By Rail	By River	
1891	24437	0	24437	9241	0	9241
1892	26620	57	26677	7374	0	7374
1893	18939	0	18939	10409	50	10459
1894	6134	0	6134	28951	0	28951
1895	6624	0	6624	34586	0	34586
1896	9430	0	9430	39623	4	39627
1898	12853	0	12853	39543	49	39592
1906-7	13126	1877	15003	12205	21	12226
1907-8	10341	3531	13872	22426	640	23066
1908-9	5056	3288	8344	22932	2190	25122
1909-10	4418	7551	11969	22757	1785	24542
1910-11	5748	7910	13658	18169	1443	19612
1912-13	7394	8320	15714	24361	1949	26310
1913-14	8008	8964	16972	13041	1749	14790
1914-15	4845	8814	13659	22063	828	22891
1915-16	5052	9266	14318	21422	1094	22516
1917-18	933	7189	8122	25474	3950	29424
1918-19	810	8458	9268	23258	2980	26238
1919-20	1326	4985	6311	30566	2677	33243
1920-21	1270	5278	6548	28967	2080	31047

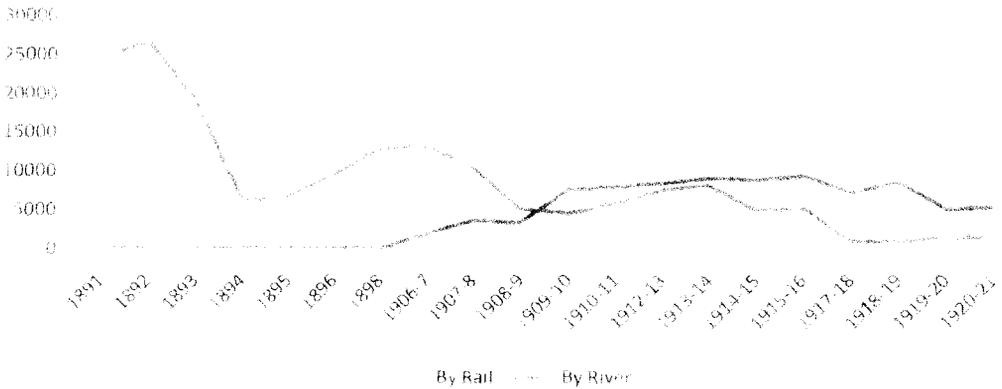
Source: *Return of the Rail and River-Borne Trade of Bengal, Statement No. II- Trade by Rail between the different Blocks of Bengal and the different Provinces of India, Statement No. III –Trade by Rail between the different blocks of Bengal, Statement B: The River-borne trade between Assam and several blocks of Bengal, for the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.*

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table I : Showing Quantity (in mounds) and value (in rupees) of each article imported by rail and river to each internal block of Eastern Bengal and Assam to other provinces, **Table III :** Showing Quantity (in mounds) and value (in rupees) of each article imported by, river only, to each internal block of Eastern Bengal and Assam From other provinces, in the year 1906-7,1907-8,1908-9, 1909-10 and 19010-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

Report on the Trade Carried by Rail and River in Bengal Table No. I: Quantity (in mounds) and Value (in rupees) of each Article Imported by Rail and River into each Internal Block in Bengal from each External block and from Calcutta, and into Calcutta from Bengal, **Table No. III.** Quantity (in mounds) and Value (in rupees) of each Article Imported by River into each Internal Block in Bengal from Assam and from Calcutta ; and from the United Province of Agra and Oudh, from Bihar and Orissa and from Bengal into Calcutta in the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal. Bengal Secretariat Book Depot (BSBD), Calcutta ²⁵

Table No.3.5.6

Cotton Manufactured Twist and Yarn(European):Comparative Import Study



Source: Graph According to the Data of Table. No.3.5.5

The graphical explanation clearly shows that, at the initial stage, the role of railway was dominant to import the European cotton manufactured twist and yarn. After the year 1908-9, the import by river remarkably increased, at the same time role of railway surprisingly reduced

Table No.3.5.7

Cotton Manufactured Twist and Yarn(Indian):Comparative Import Study

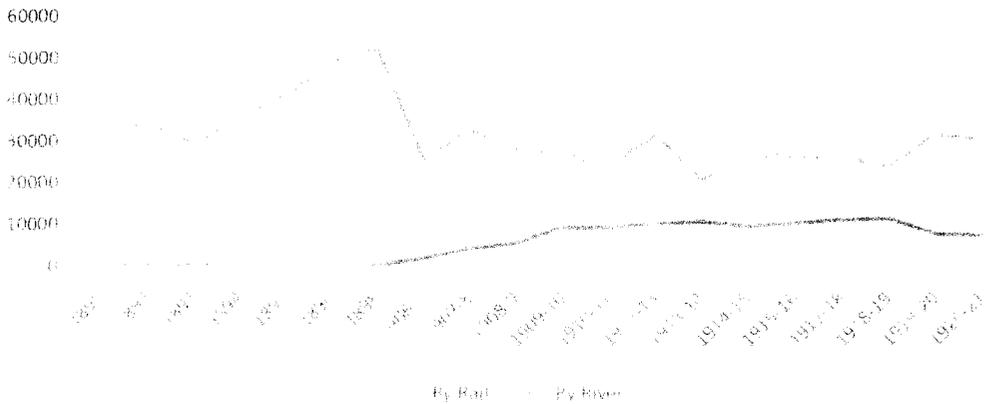


Source: Graph According to the Data of Table No 3.5.5

We follow a different trend in the import of Indian cotton twist, here the role of railway surprisingly increased between the years 1894 to 1898, but again declined in 1906-7 due to Swadeshi and Boycott movement after that it followed a normal progress except in the year 1913-14. However, the movement had no enduring impact on the import of foreign or Indian mill made twist and yarn.

Table No.3.5.8

Total Cotton Twist and Yarn Imported By Rail and River.

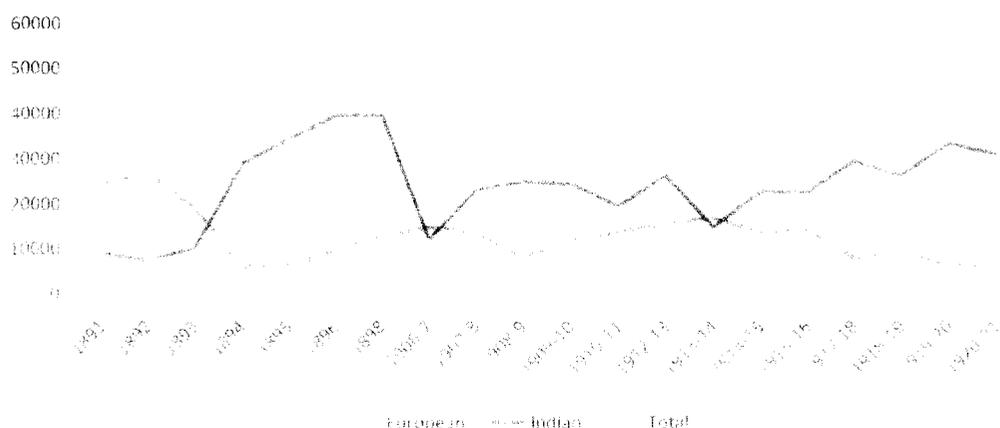


Source: Graph According to the Data of Table No 3.5.5

The graph indicates the comparative role of river and railway to import the total cotton twist and yarn including European and Indian. At the initial stage, the role of railway was comparatively very significant. In the year 1906-7, the import of the cotton twist and yarn declined during the *Swadeshi* movement in Bengal, after that except in the 1913-14, the import stabled near above in 25000 mounds. In the last two years where the role of river declined at the same time the role of railway increased and stable at above 30000 mounds.

Table No.3.5.9

Comparative Study of the Total Imported Twist and Yarn



Source: Graph According to the Data of Table No 3.5.5

The table considerably indicates the trend toward the acceptance of the Indian and European cotton twist in North Bengal. It is clear though earlier, the European cotton highly attracted to the weaver of North Bengal but at the last count, the European cotton import highly declined in North Bengal at the same time Indian made twist and yarn remarkably increased. The green line of the graph indicates the total trend of the import of the cotton twist and yarn. During *Swadeshi* movement the total import outstandingly hampered but after that the line maintained a linear progress.

Table No.3.5.10
Comparative Import Study of the Cotton Piece Goods in North Bengal
 (Quantity in Mounds: 82.2/7 lbs.)

Year	Cotton Piece-goods European		Total	Cotton Piece goods Indian		Total
	All Quantity In Mounds			All Quantity In Mounds		
	By Rail	By River		By Rail	By River	
1891	337347	0	337347	10292	3	10295
1892	362703	146	362849	6114	13	6127
1893	361769	62	361831	6552	4	6556
1894	344318	0	344318	15671	3	15674
1895	320115	0	320115	19304	62	19366
1896	319776	12	319788	21072	17	21089
1898	330230	25	330255	16941	22	16963
1906-7	202247	11480	213727	13404	1087	14491
1907-8	226999	4505	231504	27446	8769	36215
1908-9	209910	10180	220090	26742	8645	35387
1909-10	230901	11318	242219	24707	15924	40631
1910-11	224224	10341	234565	18603	21356	39959
1912-13	300933	9737	310670	27873	17698	45571
1913-14	320321	9988	330309	32369	18310	50679
1914-15	239380	44230	283610	27339	22391	49730
1915-16	263446	17972	281418	31039	24261	55300
1917-18	179612	10437	190049	50980	12332	63312
1918-19	111839	12451	124290	48213	10885	59098
1919-20	201249	6470	207719	53523	8164	61687
1920-21	151797	3395	155192	52940	5400	58340

Source:

Return of the Rail and River-Borne Trade of Bengal, the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta.

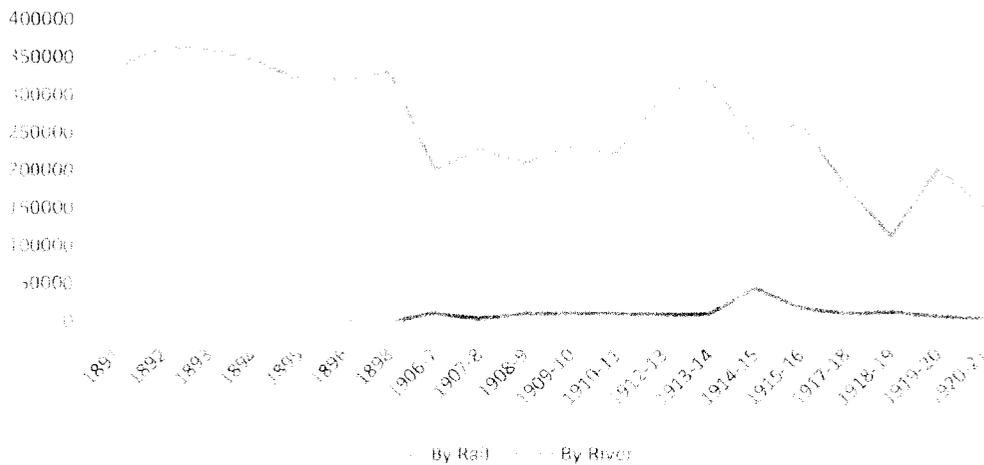
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, for the year 1906-7,1907-8,1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong.

Report on the Trade Carried by Rail and River in Bengal the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD), Calcutta (For Details see Reference No.17)

The early nationalist economic historians established their de-industrialization argument based on the statics of external trade, which indicates the collapse in traditional Indian textile export, and the rapid increased in foreign import. The above table clearly indicates the comparative role of the railways to import the cotton piece goods from European and Indian cotton mill.

Table No.3.5.11

Cotton Piece Goods (European) Imported By Rail and River in North Bengal

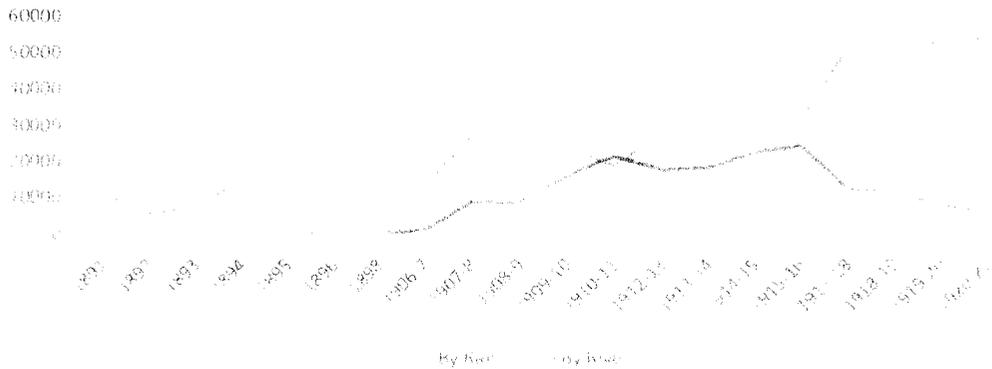


Source: *The Graph Calculated According to Table No.3.5.10*

The graphical explanation of the above table indicates that the import trend of the European finished cotton products remarkably decreased, but the role of the railway was dominant in the last decade of the 19th century. Here, undeniably, railway took an essential role to open the market of Northern Bengal for the British finished cotton products. Therefore, the high transport facility by the railways undoubtedly accelerated the pressure on the handloom industry. It is noticeable, the demand of the mill-made cotton products remarkably reduced probably due to decline of purchase power during the post-World war period in North Bengal. According to Raghendra Chattopadhyay, the economic depression was the main factor behind the decline of import trade²⁶.

Table No.3.5.12

Cotton Piece Good (Indian) Imported By Rail and River in North Bengal



Source: The Graph Calculated According to Table No. 3.5.10

The above table indicates that the role of river was very significant up to the year 1915-16. The river trade would continue mainly by the Bhagirathi River from Calcutta. The import by railway considerably increased, where import by the river constantly decreased. It is notable that Indian finished cotton products mainly imported from the Western province basically from Bombay via Calcutta to North Bengal.

Table No.3.5.13

Comparative Study of the Total Imported Cotton Piece Good in North Bengal



Source: The Graph Calculated According to Table No. 3.5.10

The above table especially indicates the demand of the foreign cotton goods, which undoubtedly decreased in the post-World war period, but surprisingly Indian cotton finished goods slowly increased until the second decade of the 20th century. The native cotton Products, mainly would export from Bombay cotton mill and the graph obviously indicate the development of the Indian cotton industry. The argument is as well supported by Raghavendra Chattopadhyay. In his scholarly attempts, he traced on the regional imbalance in Indian process of industrialization and de-industrialization. When Bihar and Orissa, hinterlands in the industrial map of colonial India, followed the familiar pattern of de-industrialization and their rate of deceleration was so high as to more than offset the industrialization of Bengal province. At the same time, Bengal and Bombay were taking shape as the new industrially developed regions until 1920²⁷. Therefore, the study as well indicates a slow trend of re-industrialization in India up to 1921.

Table No. 3.5.14
World Manufacturing Output 1750-1938
(in percent)

Year	India	China	Rest of the Periphery	Developed Core
1750	24.5	32.8	15.7	27.0
1800	19.7	33.3	14.7	32.3
1830	17.6	29.8	13.3	39.5
1880	2.8	12.5	5.6	79.1
1913	1.4	3.6	2.5	92.5
1938	2.4	3.1	1.7	92.8

Source: Simmons 1985, Table 1, p. 600, based on Bairoch 1982, Tables 10 and 13, pp. 296 and 304.

Note: India refers to the entire subcontinent

Cited in David Clingingsmith, Jeffrey G. Williamson: India's Deindustrialization in the 18th and 19th Centuries, Department of Economics, Harvard University, Cambridge MA 02138, CEPR and NBER, August 2005, JEL No. F1, N7, O2.

The above table undoubtedly supports the argument of the Indian de-industrialization based on the gradual decline of the Indian manufacturing production in respect of World manufacturing output. From 1750, India's percentage in World manufacturing output exceptionally declined and reaches in a highest point 1.3% in the year 1913. It is notable, at the same time for the year 1913-14 the import of the European cotton goods in the North Bengal remarkably enhanced (See Table No. 3.5.13).

Table No. 3.5.15
Population of Gangetic Bihar Dependent on Different Occupations
(in percent)

	1809-1813	1901
Spinners	10.3	} 1.3
Weavers	2.3	
Other Industrial	9.0	} 7.2
TOTAL	21.6*		8.5

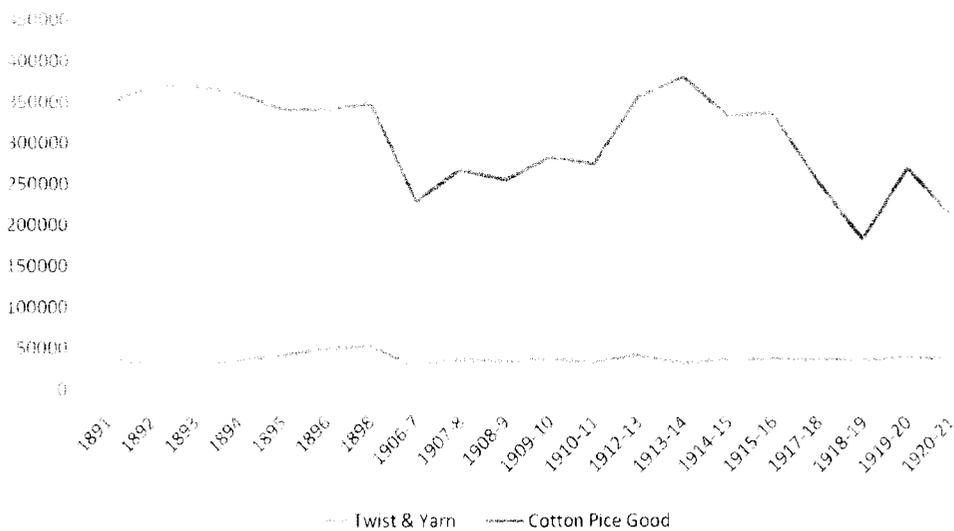
Source:

Bagchi (1976b): Tables 1-5. Bagchi reports 18.6%, but this appears to be a mistake. Cited in David Clingingsmith ,Jeffrey G. Williamson: India's Deindustrialization in the 18th and 19th Centuries, Department of Economics, Harvard University ,Cambridge MA 02138 , CEPR and NBER, August 2005. JEL No P1, N7, O2.*

The above study evidently indicates the decline of the dependent workers in the weaving or handloom industry. Only 1.3 percent employee worked on handloom industry in the year 1901, which remarkably reduced from the years 1809-1913. In the table below we applied different method to study the nature of the de-industrialization and its impact on the handloom industry of North Bengal. Here we follow the import trend of the cotton twist and yarn which mainly used to make finished clothes by the handloom industry of North Bengal. The study indicates the nature of de-industrialization in respect of the demand of cotton twist and yarn, which basically supplied by the railways.

Table No.3.5.16

Comparative Study of the Total Imported Cotton Piece Goods and Cotton Twist and Yarn



Source: *The Graph Calculated According to Table No3.5.5 and 3.5.10*

According to few scholars, railways accelerated the decline of handloom industry by making imported and Indian factory-made cloth available at prices lower than local weavers could charge. According to others, the market position of handloom cloth was actually solidified by the railways due to the new availability of low priced factory-made yarn and that the numbers of weavers did not decline²⁸. The above table significantly indicates that the handloom industry of Northern Bengal was more or less stable up to 1921, because the demand of Indian and European factory-made yarn not declined for making the handloom cloths. If we argue that the weaver liked to use the cheap yarn than there was no negative and positive impact of the railways on the handloom industry of North Bengal between the years 1891 to 1921. It is also right that the import of foreign and Indian cotton piece goods highly accelerated by the railways (see Table No.3.5.11). As a whole, the demand of the factory-made cotton goods declined after the post-world war period, due to the decline of the purchase power in North Bengal (see in the Chapter No. 3.7.2) for worldwide economic depression.

The handloom industry mainly developed in Pabna district of North Bengal, where six registered hosiery industry successfully continued up to 1935 (See the Table No. 3.5.1).The handloom industries in Pabna which survived with the competition of the European and Bombay mills and was still the most important cottage industry in the district till 1923. It was estimated that there were 9500 looms in the districts, of which 3000 were the fly –shuttle looms, and the outturn of the cloth was 7,500,000 yards a year²⁹. It is notable that due to the impact of industrialization, the handloom manufacturing also affected and modernized by using of fly–shuttle and foreign yarn. The Muhammadan *Jolahas* and Hindu *Tantis* in the Pabna district used mainly the English yarn, and the Japanese yarn to a small extent to produce their finished cloth. We already discussed the statistics of imported cotton twist and yarn, and exported cotton manufactured in Northern Bengal, from where we can easily understand the role of railways to assist or demolish the cottage industries. Due to the machine made imported inexpensive foreign twist and yarn with regular and cheap transportation cost, the price of finished product should lower, instead of the production cost was comparatively high due to purchase of the twist and yarn through the middlemen because the weavers purchase it on credit paying a massive interest³⁰.

O'Malley, like John Hurd significantly mentioned the industrialization had also some positive impact that helped to survive the cottage industries in North Bengal. Using flying shuttle, modern machine made yarn and twist cheap with the regular transport system with the development of railways, comparatively reduced the production cost. O'Malley has blamed to the credit paying and high-interest system for the high production cost. According to another point of view, Lancashire manufacturers benefited from cost reductions in both spinning and weaving. Indian weavers gained from the use of cheaper

imported yarn, but there was no decline in weaving cost, and yet they had to compete with the lower prices of machine-made imported cloth. According to Toru Matsui, weaver's conditions could hardly have improved³¹. Before the railway, virtually no modern industry existed in the Northern Bengal. By transporting raw material at lower cost and carrying finished goods to the internal market's railway took an essential role to growth the modern industry like hosiery. In 1920, only three hosiery factories were successfully continuing in the Northern Bengal, and the products exported to most part of Bengal. As said by O'Malley, the companies unable to cope the excessive demand³². According to the demand of cotton twist and yarn which basically used for the handloom industry of North Bengal, we may conclude that the development of railway had no adverse effect on the cottage industry of North Bengal when the other places of India were largely affected. Instead, six modern registered hosiery industries were successfully continuing in the Pabna district up to 1935³³.

¹ . Fritz Lehmann, 'Empire and Industry: Locomotive Building Industry in Canada and India , 1850-1939. Indian History Congress, Waltair Session ,1979, Cited in Roopa Srinivasan, Op.cit.p.xxiii.

² Cited In Bipan Chandra: *Economic Nationalism and the railways Debated circe 1880-1905, Our Indian Railway, Theme's in Indian Railway History* Ed. By Roopa Srinivasan, Manish Tiwary, Sandeep Silas.pp.85,86.

³ . Tirthankar Roy, *The Economic History of India, 1857-1947*, Oxford University Publication , New Delhi, 2008, p. 89.

⁴ . Classified List of Factories in Bnegal,Registered under the Factories Act, Corrected up to 31st May 1935, Part: 1, by Office of the Chief Inspector of Factories, Bengal, Bengal Government Press, Alipore, 1935,pp.135-62.

⁵ . Return of the Rail and River –Borne Trade of Bengal ,During the Quarter Ending the 31st March 1895, The Bengal Secretariat Press, 1895,Calcutta,p.3

⁶ . Hunter, SAB, Pabna. Op. cit.p.331

⁷ L.S.S. O'Malley. District Gazetteers Pabna, Op. cit.p.61

⁸ . Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,p.6.

⁹

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st March 1891,	Statement No. II, pp. XXX - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th June 1891,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th Sept. 1891,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st Dec. 1891,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st March 1892,	Statement No. II, pp. XXX - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th June 1892,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th Sept. 1892.	Statement No. II, pp. xxx - lv. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st Dec., 1892	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1893,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June, 1893,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept. 1893,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec. 1893,	Statement No. II, pp. II - liii. Statement No. III, pp. III - lxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Mar, 1894,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi.

		Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1894,	Statement No. II, pp. xxxi - lvii. Statement No. III, pp. lviii - lxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1894,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxxiii. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1894,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1895.	Statement No. II, pp. xxxv - lxi. Statement No. III, pp. lxii - lxxiii. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1895,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept 1895,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1895,	Statement No. II, pp. xxxi - lvi. Statement No. III, pp. lviii - lxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March 1896,	Statement No. II, pp. xl - lxiii. Statement No. III, pp. lxiv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1896,	Statement No. II, pp. xxxi - lxxv. Statement No. III, pp. lxxvii - lxxxix. Statement No. B, pp. ix - xviii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1896,	Statement No. II, pp. xxx - lxi. Statement No. III, pp. lxiv - lxxv. Statement No. B, pp. ix - xviii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1896,	Statement No. II, pp. xxxv - lxix. Statement No. III, pp. lxxii - lxxxiv. Statement No. B, pp. ix - xix.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1898,	Statement No. II, pp. xlii - lxxvii. Statement No. III, pp. lxxx - xcii. Statement No. B, pp. ciii - cxiii.

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1898,	Statement No. II, pp. xliv - lxxix. Statement No. III, pp. lxxx - xciv. Statement No. B, pp. civ - cxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1898,	Statement No. II, pp. xliv - lxxix. Statement No. III, pp. lxxx - xciv. Statement No. B, pp. civ - cxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1898,	Statement No. II, pp. xlvi - lxxxiii. Statement No. III, pp. lxxx - xcviii. Statement No. B, pp. cx - cxxxi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sep 1899,	Statement No. II, pp. xliv - lxxxi. Statement No. III, pp. lxxx - xcvi. Statement No. B, pp. cviii - cxxix.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1899.	Statement No. II, pp. xiii - lxxxi. Statement No. iii, pp. lxxx - xcvi. Statement No. B, pp. cviii - cxxix.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept. 1900,	Statement No. II, pp. xlvii - xciii. Statement No. III, pp. xciv - cix. Statement No. B, pp. cxx - cxliii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam , EBASP, Shilong,	1906-07.	Statement No II, pp. xxii - xxxv Statement No. IV, pp. liv - lxxvii
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1907-08,	Statement No. II, pp. xxii - xxxv. Statement No. IV, pp. liv - lxxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1908-09,	Statement No. II, pp. xxii - xxxv. Statement No. IV, pp. liv - lxxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1909-10,	Statement No. II, pp. xxii - xxxv. Statement No. IV, pp. lii - lxiii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1910-11,	Statement No. II, pp. xxii - xxxv. Statement No. IV, pp. lii - lxxv.

Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1912-13,	Statement No. II, pp. 19 - 38.
		Statement No. IV, pp. 58 - 74.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1913-14,	Statement No. II, pp. 23 - 42.
		Statement No. IV, pp. 62 - 78.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1914-15,	Statement No. II, pp. 25 - 44.
		Statement No. IV, pp. 64 - 80.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1915-16,	Statement No. II, pp. 30 - 55.
		Statement No. IV, pp. 71 - 86.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1917-18,	Statement No. II, pp. 30 - 55.
		Statement No. IV, pp. 71 - 86.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1918-19	Statement No. II, pp. 32 - 57.
		Statement No. IV, pp. 73 - 88.
Report on the Trade Carried by Rail and River in Bengal . BSBD, Calcutta,	1919-20	Statement No. II, pp. 32 - 57.
		Statement No. IV, pp. 73 - 88.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1920-21	Statement No. II, pp. 32 - 57.
		Statement No. IV, pp. 73 - 88.

¹⁰ . L.S.S. O'Malley. District Gazetteers Pabna, Op. cit.p.61

¹¹ Ibid.

¹² . Pradosh Chowdhury , Op.cit.p.11.

¹³ . John Hurd : Railways Op.cit. p.158 & 159

¹⁴ . District Census Handbook ,Jalpaiguri, 1951,p.li

¹⁵ . *The Annual Administrative Report of the Coochbehar State for the Year 1895-1896*, Coochbehar State Press, Coochbehar, 1895-96, p.14

¹⁶ . Daniel Thorner : "Deindustrialization in India 1881-1931," in D. Thorner and A. Thorner (eds.), *Land and Labour in India*, Asia Publishing House, Bombay, 1962

¹⁷ . Morris D. Morris : "Trends and tendencies in Indian economic history," in *Indian Economy in the Nineteenth Century: A Symposium*, Indian Economic and Social History Association, Delhi, 1969.

¹⁸ . Romesh Dutt, *The Economic History of India, vol I, Under Early British Rule, 1757-1837* (2 Vol; 2nd ed.; London 1906; repr, Government of India Publications Division, Delhi, 1960.

¹⁹ . A.K. Bagchi, *Deindustrialization in Gangetic Bihar 1809-1901*, in B.De, et. al.(Ed), *Essays in Honour of S.C.Sarkar*, People's Publishing House, New Delhi 1976, Cited in Sumit Sarkar, *Modern India, 1885-1947*, Macmillan India Limited, Madras, p.30.

²⁰ . David Clingingsmith, Jeffrey G. Williamson: *India's Deindustrialization in the 18th and 19th Centuries*, Department of Economics, Harvard University, Cambridge MA 02138, CEPR and NBER, August 2005, JEL No. F1, N7, O2.

in the 18th and 19th Centuries, Department of Economics, Harvard University, Cambridge MA 02138, CEPR and NBER, August 2005, JEL No. F1, N7, O2.

²¹ John Hurd : Railways Op.cit. pp.158, 159.

²² . John Hurd : Railways Op.cit. p.159

²³ . Sumit Sarkar Op.Cit.p.29

²⁴ . Raghendra Chattopadhyay : Trend of Industrialisation in Bengal, 1901-1931, (Reviewed work), *Economic and Political Weekly*, Vol. 16, No. 35 (Aug. 29, 1981), pp. 1425-1432.

²⁵ .
Return of the Rail and River-Borne Trade
of Bengal During the Quarter Ending the 31st March 1891,

Statement No. II, pp. XXX - I.
Statement No. III, pp. liv - lx.
Statement No. B, pp. vii - x.

Return of the Rail and River-Borne Trade
of Bengal During the Quarter Ending the 30th June 1891,

Statement No. II, pp. xxx - I.
Statement No. III, pp. liv - lx.
Statement No. B, pp. vii - xv.

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th Sept. 1891,	Statement No. II, pp. xxx - lii. Statement No. III, pp. liv - lx. Statement No. B, pp. vii - xv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st Dec. 1891,	Statement No. II, pp. xxx - li. Statement No. III, pp. liv - lx. Statement No. B, pp. vii - xv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st March 1892,	Statement No. II, pp. XXX - lii. Statement No. III, pp. liv - lx. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th June 1892,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lx. Statement No. B, pp. vii - xv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th Sept 1892,	Statement No. II, pp. xxx - liv. Statement No. III, pp. liv - lxiv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st Dec., 1892	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxx. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1893.	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June, 1893,	Statement No. II, pp. xxx - lii. Statement No. III, pp. liv - lxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept. 1893,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxvi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec. 1893,	Statement No. II, pp. II - liii. Statement No. III, pp. III - lxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Mar, 1894,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June, 1894,	Statement No. II, pp. xxxi - lvii. Statement No. III, pp. lviii - lxix. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept. 1894,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxvi.

		Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1894,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxx.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1895,	Statement No. II, pp. xxxv - lxi. Statement No. III, pp. lxii - lxx. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1895,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1895,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxx. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1895,	Statement No. II, pp. xxxi - lvi. Statement No. III, pp. lviii - lxix. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March 1896,	Statement No. II, pp. xl - lxiii. Statement No. III, pp. lxiv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1896,	Statement No. II, pp. xxxi - lxxv. Statement No. III, pp. lxvii - lxxxix. Statement No. B, pp. ix - xviii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1896,	Statement No. II, pp. xxx - lxi. Statement No. III, pp. lxiv - lxxv. Statement No. B, pp. ix - xviii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1896,	Statement No. II, pp. xxxv - lxix. Statement No. III, pp. lxxii - lxxxix. Statement No. B, pp. ix - xix.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1898,	Statement No. II, pp. xlii - lxxvii Statement No. III, pp. lxxx - xcii. Statement No. B, pp. ciii - cxii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1898,	Statement No. II, pp. xliv - lxxv. Statement No. III, pp. lxxx - xciv Statement No. B, pp. civ - cxx.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1898,	Statement No. II, pp. xliv - lxxxix. Statement No. III, pp. lxxx - xciv Statement No. B, pp. civ - cxxv.

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1898,	Statement No. II, pp. xlvi - lxxxiii. Statement No. III, pp. lxxx - xcviii. Statement No. B, pp. cx - cxxxi.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam , EBASP, Shilong,	1906-07,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III,, pp. xxxv - liii. Statement No. IV, pp. liv - lxvi.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1907-08,	Statement No. I, pp. i - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - liii. Statement No. IV, pp. liv - lxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1908-09,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - liii. Statement No. IV, pp. liv - lxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1909-10,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III pp. xxxv - li. Statement No. IV, pp. lii - lxiii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1910-11,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - li. Statement No. IV, pp. lii - lxv.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1912-13,	Statement No. I, pp. 1 - 10. Statement No. II, pp. 19 - 28 Statement No. III, pp. 39 - 47 Statement No. IV, pp. 58 - 60
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1913-14,	Statement No. I, pp. 5 - 10. Statement No. II, pp. 23 - 40. Statement No. III, pp. 43 - 60. Statement No. IV, pp. 62 - 70.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1914-15,	Statement No. I, pp. 7 - 20. Statement No. II, pp. 25 - 41. Statement No. III, pp. 45 - 60. Statement No. IV, pp. 64 - 80.
Report on the Trade Carried by Rail and River in Bengal, BSBD, Calcutta,	1915-16,	Statement No. I, pp. 7 - 29. Statement No. II, pp. 30 - 55. Statement No. III, pp. 56 - 70.

		Statement No. IV, pp. 71 - 86.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1917-18,	Statement No. I, pp. 7 - 29. Statement No. II, pp. 30 - 55. Statement No. III, pp. 56 - 70. Statement No. IV, pp. 71 - 86.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1918-19	Statement No. I, pp. 7 - 31. Statement No. II, pp. 32 - 57. Statement No. III, pp. 58 - 72. Statement No. IV, pp. 73 - 88.
Report on the Trade Carried by Rail and River in Bengal . BSBD, Calcutta,	1919-20	Statement No. I, pp. 7 - 31. Statement No. II, pp. 32 - 57. Statement No. III, pp. 58 - 72. Statement No. IV, pp. 73 - 88.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1920-21	Statement No. I, pp. 7 - 31. Statement No. II, pp. 32 - 57. Statement No. III, pp. 58 - 72. Statement No. IV, pp. 73 - 88.

²⁶ "While Bengal and Bombay suffered from a cyclical downturn in industry in the late 1920s, the impact of the Depression in the industrial sector appears to have been limited to these two areas only."

Raghabendra Chattopadhyay :Trend of Industrialisation in Bengal, 1901-1931, (Reviewed work), Economic and Political Weekly, Vol. 16, No. 35 (Aug. 29, 1981), pp. 1425-1432

²⁷ . Raghabendra Chattopadhyay :Trend of Industrialisation in Bengal, 1901-1931, (Reviewed work), Economic and Political Weekly, Vol. 16, No. 35 (Aug. 29, 1981), pp. 1425-1432.

²⁸ . John Hurd : Railways Op.cit. pp. 158, 159.

²⁹ . L.S.S. O'Malley. District Gazetteers Pabna, Op.cit.p.62

³⁰ . L.S.S. O'Malley. District Gazetteers Pabna, Op.cit.p.63

³¹ . Toru Matsui rejoinder to Morris D. Morris :“Trends and tendencies in Indian economic history,” in *Indian Economy in the Nineteenth Century: A Symposium* ,Indian Economic and Social History Association,Delhi,1969. Cited in Sumit Sarkar Op Cit.p.29

³² . L.S.S. O'Malley. District Gazetteers Pabna, Op.cit.p.61

³³ . Classified List of Factories in Bengal, Registered under the Factories Act, Corrected up to 31st May 1935, Part: 1, by Office of the Chief Inspector of Factories, Bengal, Bengal Government Press, Alipore, 1935,pp.135-62.(Follow the Table No. 3.5.1 of this chapter.)

Chapter No. 3.6

Role of Railways on Price Convergence and to Reduce the Price Gap in North Bengal

3.6. Role of Railways on Price Convergence and to reduce the Price gap in North Bengal

Theory suggests that an integrated goods market should create important benefits for an economy. Larger markets may enlarge investment opportunities and also create incentives for innovation and technical progress. One important element of market integration is how close prices are throughout the economy for the same goods. Declining price dispersion is a sign of greater market integration. Transportation costs, in turn, are an important factor of price dispersion. Falling transport costs, therefore, should lead to fewer price dispersions and better integrated markets. That is why it is particularly useful to study markets in the nineteenth century, as that period observed the emergence of wide transportation networks in many parts of the world and India also. There is a rich literature on how the introduction of steamships, railways, the construction of canals, and better roads during this time transformed transportation and brought prices closer together in many countries. The construction of railroads, in particular, has been acknowledged as vital to these processes of price convergence and market integration. This was undoubtedly true for British India. During the latter half of the nineteenth century, the country built the fourth most extensive railway network.

A huge literature exists on commodity price convergence across nations, but more relevant for the purposes of our study is the research on convergence within nations. Thomas Berry indicates that with the introduction of steamships in America, price differences for lard, pork, and wheat flour between New Orleans and Cincinnati fell by over 70 percent between 1816 and 1860¹. Matthew Slaughter studies the same pattern between 10 goods prices for six large U.S. cities during the period in 1820 to 1860 and notes these were years in which an extensive system of canals and railroads was being established². Jacob Metzger study indicates a narrowing of inter provincial price differences in wheat and rye in Russia after 1870 and attributes it to the nation's expanding railway system³. Another significant study by Kevin O'Rourke and Jeffrey Williamson highlight the dramatic decline in the Bavarian/Prussian price gap in wheat and oats from 1854–1904, a time when Germany established its rail system⁴.

A few important studies also have been conducted on Indian context. According to John Hurd, 'before railways, inter-regional rice differences were pronounced, and the local prices of grain, cotton, and other agricultural commodities fluctuated with the changes in regional supply conditions, particularly rainfall. As the railway network expanded, and with it trade in commodities, price differences between regions narrowed dramatically⁵.' According to his study on 188 districts in British India, the coefficient of variation remarkably dropped between the years 1865 to 1920. In 1865, when the coefficient of variation was over 40, in 1920 it moved on near about 20. Michelle Mc Alpin documents a sharp

convergence in Indian cotton prices during 1855 to 1912. However, she finds that there were no related changes in acreage devoted to either cotton or food grains, which one would expect if railways impacted relative prices⁶. Another study on Bengal perspective was conducted by the Mukul Mukharjee for the same period. Mukharjee selected 13 districts of Bengal, and findings indicate that the coefficient of variation outstandingly reduced between years 1855 to 1912 according to 13 selected districts of Bengal. In 1855, the coefficient of variation was over 20 in Bengal but after 1907, it settled on near about nine⁷.

Tahir Andrabi and Michael Kuehlwein applied distinct methodology to test the argument of the huge impact of railways on price convergence between the periods 1861 to 1920 in India. The findings of Tahir Andrabi and Michael Kuehlwein are very interesting and something different from the earlier findings. They conclude that, 'the period 1861 to 1920 witnessed sharp price convergence in British Indian wheat and rice markets. Previous authors have suggested that since a vast railway system was built during that time, railways were probably the main cause of that convergence. However, tests examining price differences between individual districts provide surprisingly weak support for that hypothesis. Railways clearly mattered, but even after controlling for the effects on nearby districts; railways seem capable of explaining only about 20 percent of the decline in grain price dispersion in our sample period. The modest estimated effect fundamentally derives from the fact that prices were converging during this time almost as rapidly between districts without railways as with railways. Alternatively, controlling for time trends, the gap in prices between a given district pair was not much different before they got railways than after they got it'⁸.

3.6.1. Comparative study of the Coefficient of Variation (CV) of the Common Rice between Bengal and North Bengal, 1861-1921:

In order to calculate the hypotheses that the railway reduced the price difference between the districts of North Bengal, we select the years 1861 to 1921. We have selected two necessary products for common people; the rice, one of the main export products of North Bengal and salt, most essential import product of North Bengal. We have selected only five districts of the North Bengal (Rangpur, Dinajpur, Bogra, Rajshahi and Malda) and to compare with the Bengal. We select 21 districts of Bengal (Backergonj, Noakhali, Chittagong, Dacca, Maimensingh, 24-pargana, Midnapur, Calcutta, Hooghly, Jessore, Nadia, Jessore, Bankura, Bardwan, Birbhum, Murshidabad, Rangpur, Dinajpur, Bogra, Rajshahi and Malda). At first, we find out the Coefficient of Variation or CV of common rice in the selected districts of Bengal and North Bengal. The price of rice for every district is selected at the rate of the average annual price of common rice per mound. Here, it is to be remembered that the variables are different between Bengal and North Bengal. Therefore,

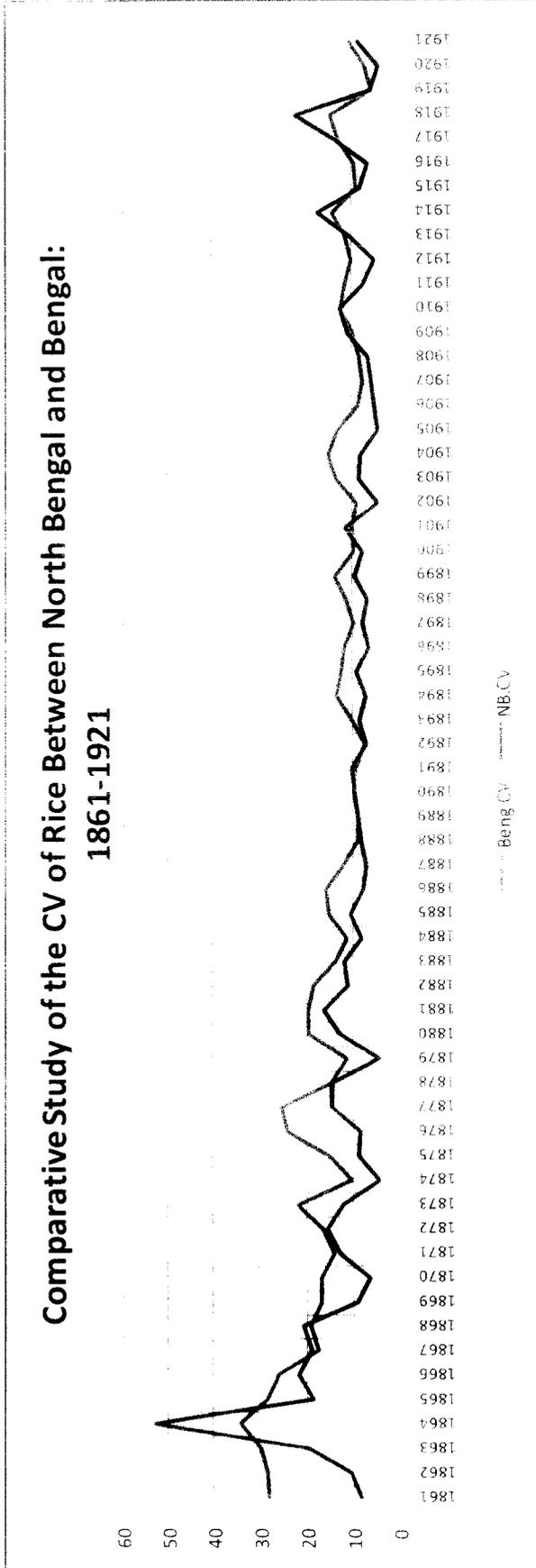
the exact comparative analysis is impossible, but we have calculated the individual trend and then compared both.

According to Mukharjee's findings, the coefficient of variation in Bengal was stable after 1892 and the CV declined below 10, which continued up to 1912. Between the years 1855 to 1857, the CV was more than 20 and after that it gradually decreased⁹. It is assumed that the foundation of railway in North Bengal in 1878, integrated the market of the selected districts of North Bengal. Our findings are something different from the Mukharjee's analysis. Before the foundation of railways in North Bengal (1861-1877), the average CV of common rice for the 17 years is 15.35, whereas, in Bengal, it is 21.98. Though, the railway was established in 1878, but the CV of Northern Bengal and Bengal mainly stabled after 1883. In 1884 to 1912, for the 29 years, the CV remarkably decreases in North Bengal where the average CV is 7.68 but in Bengal, it is 10.88 for the same period. Though, after that the CV gradually goes upward, during the First World War (1914-18) the mean of the CV of North Bengal is 13.23 which near about twice from the CV of the previous years (1884-1912). It is also remarkable during that time the average price of common rice highly increased and the import of rice into North Bengal was as well developed (Table No. 3.6.1). However, the condition was no longer same. Again, the CV moves down between the years 1919 to 1921 and the average of CV for the three years is 5.79 in North Bengal, and in Bengal, it is 7.58.

Table No. 3.6.1
Comparative study of the Coefficient of Variation (CV) of the Common Rice
Between Bengal and North Bengal :1861-1921

Year	Value in Rupee per Mound		Difference of CV		Year	Value in Rupee per Mound		Difference of CV	
	North Bengal	Bengal	North Bengal	Bengal		North Bengal	Bengal	North Bengal	Bengal
1861	1.101685	1.41868	8.298305	28.25525	1892	3.376423	3.3255	6.970048	7.126767
1862	1.217572	1.439896	10.12746	28.44639	1893	3.264141	3.461446	8.35622	9.899681
1863	1.351571	1.496296	19.42511	30.03835	1894	3.072303	3.112957	6.955148	13.23237
1864	1.71286	1.75027	53.19367	34.35673	1895	2.569185	2.522382	8.901362	12.47165
1865	2.418782	2.336504	18.5443	28.34745	1896	3.211027	3.262577	5.979715	11.63479
1866	2.403517	3.003279	21.55079	26.26216	1897	4.5368	4.367571	7.522246	9.529714
1867	1.776509	1.901646	18.79623	17.50677	1898	2.9358	3.062	6.575623	11.21626
1868	1.540559	1.751372	20.48892	19.33942	1899	2.2534	2.480714	9.359716	13.56629
1869	1.579554	1.914489	8.87499	16.82298	1900	2.8076	3.025429	7.488961	9.698216
1870	1.461214	1.747918	6.151162	16.94623	1901	3.6362	3.653143	11.14805	9.801414

Table No. 3.6.2.



1871	1.456392	1.688042	12.62911	14.03648	1902	3.2532	3.36481	4.158824	8.929873
1872	1.506763	1.719884	15.46686	16.50444	1903	2.7846	3.087571	8.278842	13.43653
1873	1.821069	1.996744	12.05814	21.90204	1904	2.7634	2.94481	7.913263	14.98808
1874	2.657806	2.888475	4.118032	10.37317	1905	3.16	3.238	4.077185	13.10334
1875	1.761521	2.107584	8.566406	15.03028	1906	4.9666	4.738905	4.706471	8.512595
1876	1.681208	1.997485	8.263043	24.10737	1907	5.466	5.352238	5.55613	7.350691
1877	1.81768	2.391653	14.40064	25.49436	1908	5.4836	5.528857	6.279882	8.129795
1878	2.756118	3.240897	14.43968	14.62831	1909	4.7326	4.537238	10.68716	9.53133
1879	3.108585	3.185268	4.046859	11.18378	1910	3.302	3.640333	12.30007	12.35972
1880	1.811964	2.090001	12.76052	19.50342	1911	3.4098	3.718524	7.163335	11.14047
1881	1.428833	1.554648	16.10095	19.64917	1912	3.7926	4.208095	4.60088	9.9334
1882	1.608717	1.663385	10.93148	18.36631	1913	5.7436	5.327714	10.25973	11.23751
1883	2.071593	2.018976	11.65218	13.85892	1914	6.1976	5.603238	17.027	13.91234
1884	2.848172	2.70097	7.718107	11.14523	1915	6.144	5.795952	7.917362	8.871437
1885	2.586936	2.686074	10.39735	14.96694	1916	5.3154	5.428714	6.04706	9.377173
1886	1.919859	2.208256	7.677856	15.88619	1917	4.8644	4.678286	13.31509	12.54606
1887	1.770347	1.922747	6.782924	11.86562	1918	4.3412	4.174952	21.88811	14.23693
1888	1.931213	2.053149	7.939088	8.951238	1919	7.6154	7.434048	5.512471	5.441284
1889	2.717056	2.772191	8.56285	8.602852	1920	7.4524	7.717667	3.739232	6.965526
1890	2.571681	2.647222	9.166869	9.69431	1921	6.574	6.752381	8.139627	10.33935
1891	2.708034	2.602954	9.750839	9.092519					

Source: *Prices and Wages in India , Thirteenth Issue , Statistical Bureau, Government of India, Office of the Superintendent of Government Printing, India, Calcutta, 1897 ,Part I, Rice (Common):pp. 2-13, Price and Wages in India, Thirty- seventh Issue, Department of Statistics, India, Published by order of the Governor- General in Council, Superintendent Government Printing India, Calcutta, 1923. Part-II -No.16, Retail Prices of Rice, pp.72-81.*

We use the graphical interpretation to clear the above discussion in the Table No. 3.6.2. The graph clearly indicates the comparative trend of price convergence between Bengal and North Bengal and signifies the difference of the CV between pre and post railway period of North Bengal.

3.6.2. Study on Price Gap of the Common Rice Between North Bengal and Bengal, 1861- 1921:

We have also applied different methodology to test the impact of railways on the price gap. We calculate the difference of the annual average price of Bengal and North Bengal for rice, and then find out the percentage of the price gap between North Bengal and Bengal. The findings clearly signify that the percentage of the price gap between North Bengal and Bengal outstandingly reduced at the post railway period after 1878. According to

our analysis, the average price gap between the years 1861 to 1877 are 7.18%, whereas, for the years after the foundation of railway 1878-1921, the price gap is only 2.68% between Bengal and North Bengal. The Table No.3.6.3 indicates the detail findings.

Year	Average Value of Common Rice in Rupee Per Mound		Bengal Average – North Bengal Average	Percentage of the Price Gap
	North Bengal	Bengal		
1861	1.101685	1.41868	0.316996	12.57737
1862	1.217572	1.439896	0.222325	8.366042
1863	1.351571	1.496296	0.144725	5.081872
1864	1.71286	1.75027	0.03741	1.080229
1865	2.418782	2.336504	-0.08228	1.730237
1866	2.403517	3.003279	0.599762	11.09274
1867	1.776509	1.901646	0.125137	3.402162
1868	1.540559	1.751372	0.210812	6.403909
1869	1.579554	1.914489	0.334935	9.585899
1870	1.461214	1.747918	0.286704	8.933992
1871	1.456392	1.688042	0.23165	7.366988
1872	1.506763	1.719884	0.213122	6.60505
1873	1.821069	1.996744	0.175675	4.601448
1874	2.657806	2.888475	0.230669	4.158977
1875	1.761521	2.107584	0.346063	8.94427
1876	1.681208	1.997485	0.316277	8.597532
1877	1.81768	2.391653	0.573973	13.63572
1878	2.756118	3.240897	0.484779	8.083678
1879	3.108585	3.185268	0.076683	1.218376
1880	1.811964	2.090001	0.278036	7.125551
1881	1.428833	1.554648	0.125815	4.217048
1882	1.608717	1.663385	0.054668	1.670732
1883	2.071593	2.018976	-0.05262	1.286303
1884	2.848172	2.70097	-0.1472	2.652692
1885	2.586936	2.686074	0.099138	1.880108
1886	1.919859	2.208256	0.288397	6.986158
1887	1.770347	1.922747	0.1524	4.126629
1888	1.931213	2.053149	0.121937	3.060379
1889	2.717056	2.772191	0.055135	1.004423
1890	2.571681	2.647222	0.075541	1.447457
1891	2.708034	2.602954	-0.10508	1.978537

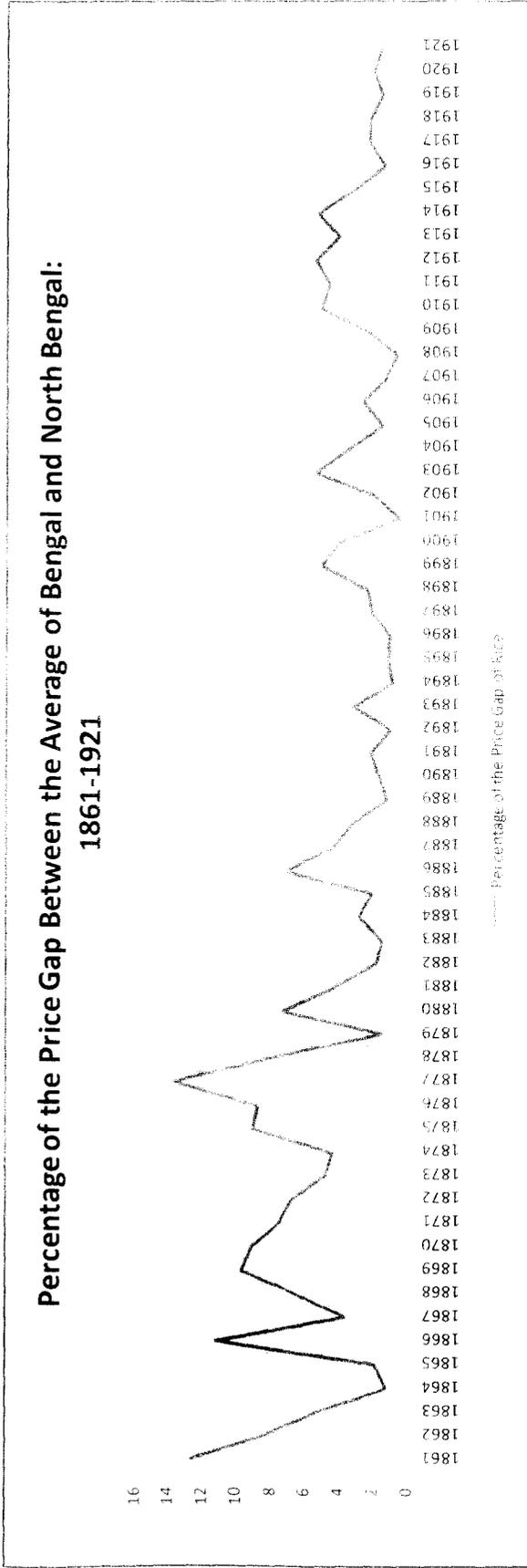
1892	3.376423	3.3255	-0.05092	0.759823
1893	3.264141	3.461446	0.197305	2.933651
1894	3.072303	3.112957	0.040653	0.657262
1895	2.569185	2.522382	-0.0468	0.919228
1896	3.211027	3.262577	0.05155	0.796312
1897	4.5368	4.367571	-0.16923	1.900511
1898	2.9358	3.062	0.1262	2.104105
1899	2.2534	2.480714	0.227314	4.801622
1900	2.8076	3.025429	0.217829	3.734399
1901	3.6362	3.653143	0.016943	0.232433
1902	3.2532	3.36481	0.11161	1.686452
1903	2.7846	3.087571	0.302971	5.159445
1904	2.7634	2.94481	0.18141	3.178046
1905	3.16	3.238	0.078	1.219131
1906	4.9666	4.738905	-0.2277	2.346042
1907	5.466	5.352238	-0.11376	1.051575
1908	5.4836	5.528857	0.045257	0.410963
1909	4.7326	4.537238	-0.19536	2.107501
1910	3.302	3.640333	0.338333	4.873482
1911	3.4098	3.718524	0.308724	4.330945
1912	3.7926	4.208095	0.415495	5.193239
1913	5.7436	5.327714	-0.41589	3.756426
1914	6.1976	5.603238	-0.59436	5.036608
1915	6.144	5.795952	-0.34805	2.914983
1916	5.3154	5.428714	0.113314	1.054664
1917	4.8644	4.678286	-0.18611	1.950334
1918	4.3412	4.174952	-0.16625	1.952145
1919	7.6154	7.434048	-0.18135	1.205043
1920	7.4524	7.717667	0.265267	1.748619
1921	6.574	6.752381	0.178381	1.338555

Source: *Prices and Wages in India , Thirteenth Issue , Statistical Bureau, Government of India,Office of the Superintendent of Government Printing, India, Calcutta, 1897 ,Part I, Rice (Common):pp. 2-13,*

Price and Wages in India, Thirty- seventh Issue, Department of Statistics, India, Published by order of the Governor- General in Council, Superintendent Government Printing India, Calcutta, 1923. Part-II- No.16, Retail Prices of Rice, pp.72-81.

The graphical explanation clears the trend of the price gap of the common rice between the North Bengal and Bengal. Table No. 3.6.4, indicates at the initial stage the price gap was maximum and unstable but after 1887, the gap was more or less comparatively stable.

Table No. 3.6.4.



3.6.3. Study on Salt:

Salt is another essential daily commodity and import product of North Bengal. We select the study of import trend, price rate, price gap and coefficient of variation of salt in respect of our research area.

3.6.3.1. Comparative Import Study of the Salt in North Bengal,

We select salt, another essential and major imported product of North Bengal to test the hypotheses that the price rate highly influenced by the modern railway transport system. Salt mostly produced in the Deltaic region of Bengal, mainly at Midnapore district. Before the foundation of railway, the salt would import to North Bengal from Deltaic Bengal via Calcutta by the Nadia rivers system. After the foundation of railway, railways took an essential role to import the salt, the most important product of the common man. The table bellow signifies the comparative role of railway. Table No. 3.6.5 indicates at the early stage (1891-98) the role of river was very insignificant because we don't have any data of the import from Calcutta to North Bengal by the river. The data basically indicates the import of salt by the river Brahmaputra. The years 1906 to 1921, exactly indicate the comparative role of the both systems since, the data of the import from Calcutta is included.

Table No. 3.6.5
Comparative Role of Railway and River to Import Salt in North Bengal :1891-1921

(Quantity in Mounds: 82.2/7 lbs.)

	By Rail	By River	Total	%of rail
1891	1018885	40	1018925	99.99607
1892	926478	550	927028	99.94067
1893	860347	208	860555	99.97583
1894	954185	619	954804	99.93517
1895	994112	179	994291	99.982
1896	1270219	631	1270850	99.95035
1898	737210	154	737364	99.97911
1906-7	856010	322451	1178461	72.63796
1907-8	674740	293197	967937	69.70908
1908-9	1010209	369506	1379715	73.21867
1909-10	914767	577605	1492372	61.29618
1910-11	880869	534581	1415450	62.23243
1912-13	1109035	548903	1657938	66.89243

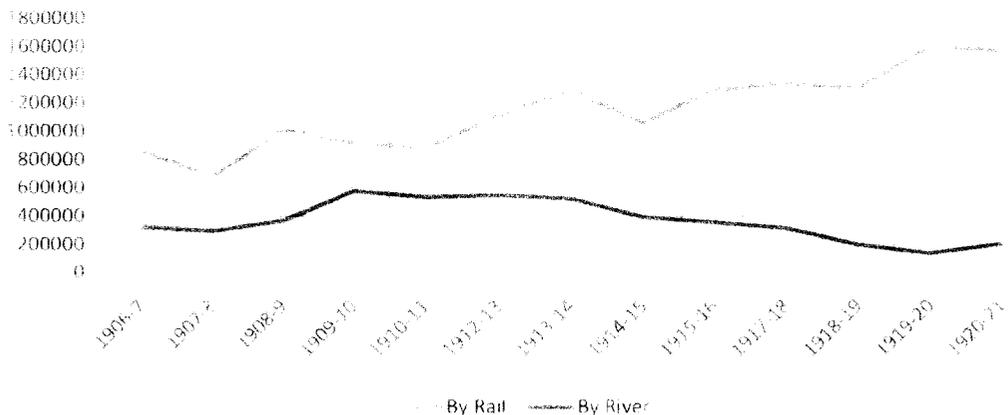
1913-14	1738059	526325	614374	7599174
1914-15	1054376	394629	1449005	7276552
1915-16	1286170	357209	1643379	7826375
1917-18	1331231	316101	1647332	8081134
1918-19	1297968	197956	1495924	8676697
1919-20	1594468	133591	1728059	922693
1920-21	1557448	200942	1758390	8857239

Source: *Prices and Wages in India Thirteenth Issue* Statistical Bureau, Government of India, Office of the Superintendent of Government Printing, India, Calcutta, 1897, Part I, Salt, pp.80-91

Price and Wages in India, Thirty-seventh Issue, Department of Statistics, India, Published by order of the Governor-General in Council, Superintendent Government Printing India, Calcutta, 1923, Part-II, Salt, pp.140-149

Table No. 3.6.6

Comparative Role of Railway and River to import Salt :1906-1921



Source: The graph prepared according to the data of the Table No.3.6.5

For graphical explanation, we select the years 1906 to 1921 to study the comparative role of the railways in North Bengal. The salt mainly would import from Calcutta and the river import-statistics of the salt from Calcutta included after 1906. The above graph is indicating the essential role of river-borne import at the initial period, but after that the

railway constantly captured the transport market of the river traffic. This is the reason that is why river-borne import inversely decreased after the year 1909-1910. From the same year import by the railway continuously increased and took a leading role in the total import of salt.

The production of rice highly depended on the important natural variables like rainfall. Therefore, the import- export trade also varied on it. The demand of rice not only depends on the national and international demand, it dominantly fluctuates according to availability of monsoon. Here, the salt is different from rice; there was no seasonal dependable variable for salt production. The price of salt was more than three times double from the price of rice due to high revenue policy of the Colonial Government at the last quarter of the 19th century. The price, at which salt was sold to the consumers in Bengal, had very little relation to its production cost. Naturally, the retail prices of salt were proportionately higher.

Table No. 3.6.7
Price of Salt and Revenue of the Company

Year	Price of Salt in Sicca Rupees per 100 mounds	Population of British India	Net Revenue from Salt in Pound	Net Revenue per Head in Pence
1793-94	302	2,40,00000	8,06,781	8,060
1803-04	354	2,78,40,000	12,19,939	10,516

Source: Appendix to the Report from the Select Committee on Salt , British India,1836,196, Cited in Balai Barui, The Salt Industry of Bengal:1857-180, K.P. Baggchi & Company , Calcutta 1985,p.142

The Report of the Select Committee on Salt, British India 1836, indicates that: 'In 1760, the cost of the salt would amount to be 4 percent of the labourer's wages; in 1790, it would amount to near 7.5 percent; and in 1830, it would exceed 10 percent of his wage¹⁰.' Therefore, we may assume that how the revenue policy of the British Government did maintain the price of salt.

3.6.3.2. Comparative Study of the Coefficient of Variation (CV) of the Salt Between Bengal and North Bengal :1861-1921

To calculate the comparative study on the price convergence of salt, we select the yearly average price of salt in Bengal and North Bengal. Our study period and districts are same as rice, in respect of Bengal and North Bengal also. The table bellow indicates the

trend of the comparative price convergence of Bengal and North Bengal. In the pre-railway period in North Bengal, the average CV is 7.34, for the same period in Bengal; it is 8.38. In the post-railway period, the CV of North Bengal and Bengal is respectively 5.65 and 9.63. Therefore, we may assume that in the post railway period due to communication development the price was significantly converged. However, we have some special findings in the same table. If we study the years 1871 to 1877, the price of salt already was converged by the conventional mode of the communication system. The CV of North Bengal exceptionally decreases after 1870, and the CV between 1871 and 1877 is only 3.82. It was possible due to river traffic facility between Calcutta and North Bengal and the nature of product. The salt may stock any time within the year, and the traders may continue the salt for long time at the store house, and they sell when the price goes up. In case of rice, it was impossible to continue for longtime in the store house, and they are bound to sell within one year. The probability of the fluctuation of price was high in case of rice due to the monsoon variable, but the salt had no as such any variable. The price of salt extremely converged between the years 1871 to 1902; here the average CV of North Bengal is 3.75 at the same period in Bengal is 7.62. In the year 1905 to 1921, the CV goes up and stands on 8.55 and 12.87 respectively, in North Bengal and Bengal.

Table No. 3.6.8

Comparative study of the Coefficient of Variation (CV) of the Salt Between Bengal and North Bengal :1861-1921

Year	Value in Rupee per Mound		Difference of CV		Year	Value in Rupee per Mound		Difference of CV	
	North Bengal	Bengal	North Bengal	Bengal		North Bengal	Bengal	North Bengal	Bengal
1861	4.895145	4.715323	8.029424	8.694304	1892	4.101616	3.919368	1.645315	6.054584
1862	4.820941	4.6745	10.08827	9.086306	1893	4.160881	3.951544	2.978072	6.303971
1863	4.804641	4.681595	11.48806	9.071516	1894	4.213373	4.035941	2.478521	9.448752
1864	4.913695	4.710873	9.458862	9.263574	1895	4.108794	3.894602	1.977311	8.603541
1865	4.900064	4.740872	9.431475	8.992779	1896	4.331728	4.13849	4.034178	8.091144
1866	5.435165	4.992044	5.645563	8.337246	1897	4.3346	4.18519	5.492946	8.690746
1867	5.158628	4.931458	9.235002	7.0378	1898	4.2234	4.007619	5.476252	9.141856
1868	5.11408	4.948196	8.994842	7.402125	1899	4.0988	3.919381	4.390153	6.851745
1869	5.007141	4.819013	11.29351	8.50126	1900	4.028	3.934333	3.823963	6.198048
1870	5.089873	4.775665	14.49043	10.51817	1901	4.1474	3.942476	6.308061	6.439039
1871	5.11372	4.869272	1.805969	7.566343	1902	3.9456	3.688381	2.709133	6.599463
1872	5.235661	4.840027	5.233262	7.484244	1903	3.4824	3.299571	5.901945	6.278734
1873	5.431772	4.905045	4.911666	8.386366	1904	3.1976	3.044048	4.170793	10.38513
1874	5.467258	5.085708	2.538202	7.849934	1905	2.8464	2.935048	4.670429	21.4009
1875	5.135506	4.805969	2.878999	5.914876	1906	2.8794	2.61019	6.757919	10.63232
1876	4.964675	4.766114	4.589125	8.399037	1907	2.631	2.288762	13.16678	16.82301
1877	4.821069	4.657825	4.797688	9.971247	1908	2.268	2.143905	5.768099	10.9128

1878	4.921363	4.629438	6.496647	8.500913	1909	2.1384	2.071952	3.309123	10.49769
1879	4.832297	4.542141	4.04198	7.898756	1910	2.189	2.051762	10.59791	10.2132
1880	4.589294	4.42903	3.771046	7.577681	1911	2.3448	2.184143	9.006888	9.365065
1881	4.522395	4.379148	3.176247	9.482243	1912	2.3216	2.214667	8.095549	10.03748
1882	3.559873	3.489424	2.913644	7.02342	1913	2.2602	2.169095	7.578395	10.005
1883	3.433247	3.339546	2.374497	9.997313	1914	2.4738	2.288333	10.12624	9.983443
1884	3.407355	3.330615	3.764861	7.906117	1915	3.0948	2.84	5.640661	11.33882
1885	3.337115	3.262828	3.539631	6.324991	1916	3.8112	3.53781	9.315989	11.07405
1886	3.402204	3.373191	3.748546	7.096076	1917	4.5848	4.191048	6.84167	11.37309
1887	3.452064	3.397058	4.807516	7.998445	1918	4.8314	4.488714	5.761775	10.31861
1888	4.191718	4.112753	4.318113	7.571773	1919	4.0668	3.924762	7.960525	9.146721
1889	4.304368	4.166092	2.694078	5.270566	1920	3.8748	4.065048	12.42649	31.47732
1890	4.303505	4.121779	2.687839	5.892355	1921	3.8248	3.510476	18.47375	14.29003
1891	4.194606	3.999239	3.603826	7.3088					

Source: *Prices and Wages in India, Thirteenth Issue, Statistical Bureau, Government of India, Office of the Superintendent of Government Printing, India, Calcutta, 1897, Part. I, Salt, pp .80-91.*

Price and Wages in India, Thirty- seventh Issue, Department of Statistics, India, Published by order of the Governor- General in Council, Superintendent Government Printing india, Calcutta, 1923. Part-II-No.16,Salt, pp.140-149

The graphical presentation of the above study significantly indicates the CV is more unstable after 1905, which continue up to 1921 (see in the Table No. 3.6.9). However, the graph significantly indicates the high trend of price convergence in the post-railway period.

3.6.3.3. Study of the Price Gap of Salt Between Deltaic Bengal and North Bengal :1861-1921

In order to calculate the impact of railway to reduce the transport cost, we calculate the price gap of the salt between the Deltaic Bengal, the production region of salt and the North Bengal. We simply study the difference of price by deduct the annual average price of one mound salt of North Bengal to Deltaic Bengal and subsequently, find out the percentage of the price gap.

Table No. 3.6.9.

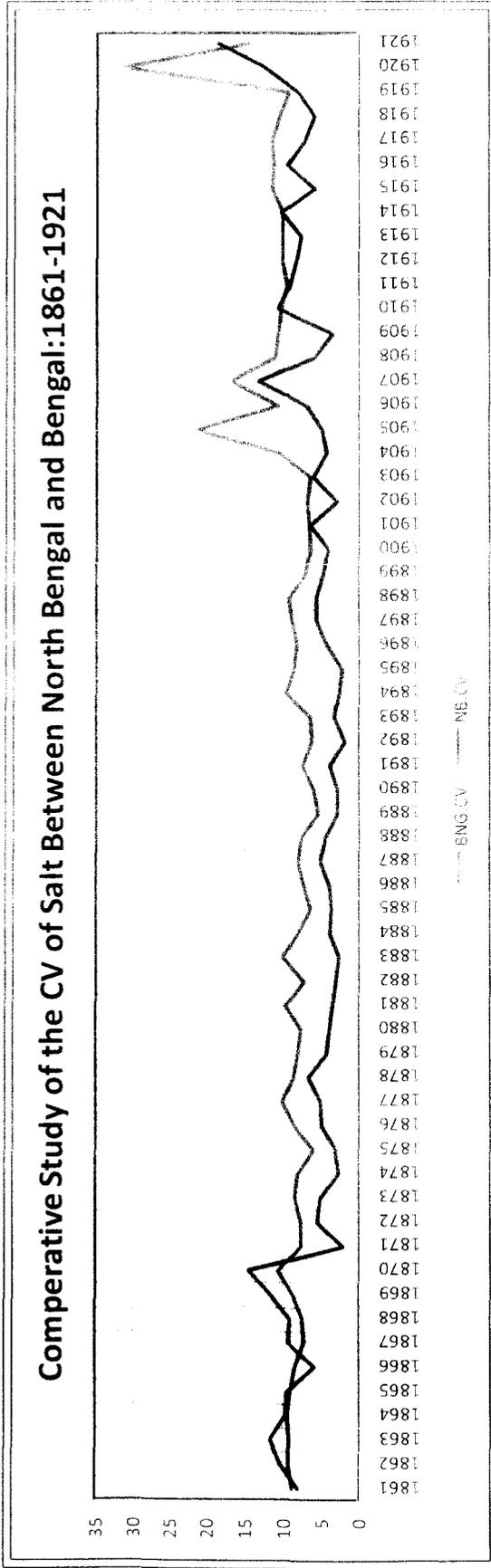


Table No. 3.6.10

The Price Gap Between Deltaic Bengal and North Bengal :1861-1921

(Value of Salt in Rs.)

Year	North Bengal	Deltaic Bengal	Difference	% of Difference	Year	North Bengal	Deltaic Bengal	Difference	% of Difference
1861	4.895145	4.41989	0.475255	5.102023	1892	4.101616	3.79867	0.302946	3.834617
1862	4.820941	4.449388	0.371553	4.007976	1893	4.160881	3.802281	0.3586	4.503232
1863	4.804641	4.366812	0.437828	4.773817	1894	4.213373	3.802281	0.411091	5.128605
1864	4.913695	4.439512	0.474183	5.069742	1895	4.108794	3.703704	0.40509	5.185154
1865	4.900064	4.530011	0.370053	3.924175	1896	4.331728	3.968254	0.363474	4.379211
1866	5.435165	4.694836	0.740329	7.308283	1897	4.3346	4.113	0.2216	2.62323
1867	5.158628	4.778973	0.379656	3.820398	1898	4.2234	3.905	0.3184	3.91713
1868	5.11408	4.750594	0.363486	3.684724	1899	4.0988	3.792	0.3068	3.888072
1869	5.007141	4.705882	0.301259	3.101596	1900	4.028	3.759	0.269	3.454475
1870	5.089873	4.550626	0.539247	5.59356	1901	4.1474	3.824	0.3234	4.057004
1871	5.11372	4.581901	0.531819	5.485143	1902	3.9456	3.721	0.2246	2.929591
1872	5.235661	4.602992	0.632669	6.430447	1903	3.4874	3.38	0.1024	1.492189
1873	5.431772	4.656577	0.775194	7.684055	1904	3.1976	3.293	-0.0954	1.469818
1874	5.467258	4.86618	0.601078	5.816825	1905	2.8464	2.829	0.0174	0.306586
1875	5.135506	4.634994	0.500511	5.12268	1906	2.8794	2.61	0.2694	4.90764
1876	4.964675	4.479283	0.485392	5.139708	1907	2.631	2.2	0.431	8.921548
1877	4.821069	4.381161	0.439908	4.780454	1908	2.268	2.048	0.22	5.097312
1878	4.921363	4.395604	0.525759	5.643025	1909	2.1384	2.001	0.1374	3.319322
1879	4.832297	4.40044	0.431857	4.677455	1910	2.189	1.928	0.261	6.339568
1880	4.589294	4.310345	0.278949	3.134391	1911	2.3448	2.096	0.2488	5.602594
1881	4.522395	4.223865	0.29853	3.413234	1912	2.3216	2.074	0.2476	5.632906
1882	3.559873	3.398471	0.161402	2.319548	1913	2.2602	2.035	0.2252	5.243062
1883	3.433247	3.139717	0.29353	4.465712	1914	2.4738	2.1	0.3738	8.172635
1884	3.407355	3.22841	0.178945	2.696669	1915	3.0948	2.768	0.3268	5.574128
1885	3.337115	3.194888	0.142227	2.177387	1916	3.8112	3.389	0.4222	5.863726
1886	3.402204	3.252033	0.150172	2.256786	1917	4.5848	4.022	0.5628	6.539016
1887	3.452064	3.254679	0.197385	2.943087	1918	4.8314	4.183	0.6484	7.192936
1888	4.191718	4.020101	0.171618	2.089889	1919	4.0668	3.757	0.3098	3.959713
1889	4.304368	4.149378	0.15499	1.833394	1920	3.8748	3.714	0.1608	2.118912
1890	4.303505	4.106776	0.196729	2.339146	1921	3.8248	3.403	0.4218	5.835801
1891	4.194606	3.90625	0.288356	3.559572					

Source: *Prices and Wages in India , Thirteenth Issue , Statistical Bureau, Government of India, Office of the Superintendent of Government Printing, India, Calcutta, 1897, Part: I, Salt, pp .80-91.*
Price and Wages in India, Thirty- seventh Issue, Department of Statistics, India, Published by order of the Governor- General in Council, Superintendent Government Printing India, Calcutta, 1923. Part-II- No.16, Salt, pp.140-149.

Primarily, according to our findings, the difference of the mean of average price of one mound salt in the pre and post railway period between the Deltaic and North Bengal is Rs.0.216. We may argue that the price gap between production region and North Bengal was reduced 77.64% in the post railway period, it is calculated according to the difference of the mean of annual average prices of pre and post railway years. The table also indicates some different findings. In 1878, the railway established in North Bengal, the maximum price gap we may follow in the years 1880 to 1905, here the average price gap remarkably declined and stable at Rs.0.261, and the rate of the price gap fall is 112.36% for the same years. The price gap significantly increased between the years 1906 to 1921. The graphical presentation indicates the trend of the price gap between the Deltaic Bengal and North Bengal (Table No.3.6.11). However, it is significant that the percentage of the price gap remarkably high between the years 1906 to 1919 (see the Table No.3.6.12).

If we compare the two essential, which clearly indicates that the price of salt was more converged than rice (Table No.3.6.17). The most important cause behind the difference is production stability in salt and the production uncertainty in rice, due to seasonal variation basically for the monsoon. According to our previous discussion, the price of rice fluctuates according to production. The price of rice increases according to scarcity of the food production. Therefore, when the import increases the price of rice also increases in the Northern Bengal. We have already discussed that due to nature of production, the salt may reserve for more than one year. Accordingly, we see the price of salt in North Bengal was also less than the price of Deltaic Bengal in the years 1905 and 1920.

3.6.4. Micro Level Study on Coochbehar State:

3.6.4.1 Comparative CV of the Retail Price of the Rice in Coochbehar State :

We have calculated the price convergence of the five districts of the North Bengal (Rangpur, Dinajpur, Bogra, Rajshahi and Malda) to evaluate the hypotheses; that the railway reduced the price difference between the districts of North Bengal. We select two mandatory products for common people; the rice, one of the main export products of North Bengal and salt, most necessary import product of North Bengal. However, the study was district level. In order to micro level study, we select the subdivisions within the Coochbehar state (though they would call the district but in a true sense all are the subdivisions of the present Coochbehar district of West Bengal).

Table No. 3.6.11.

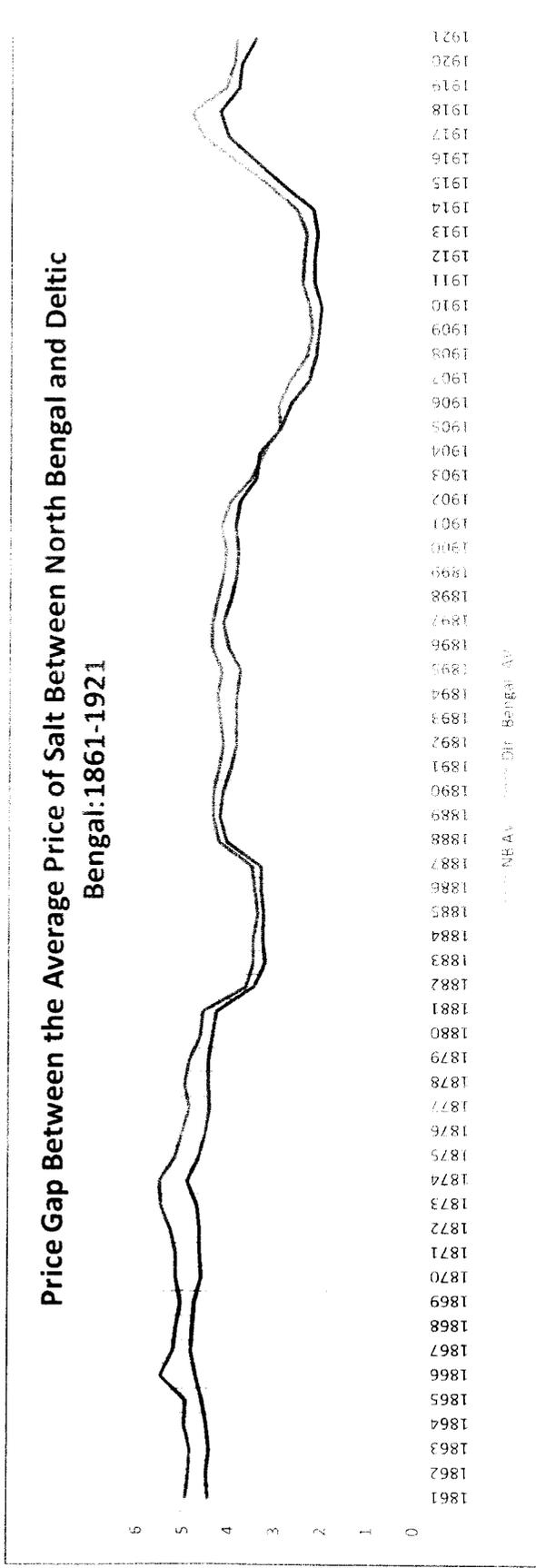


Table No. 3.6.12.

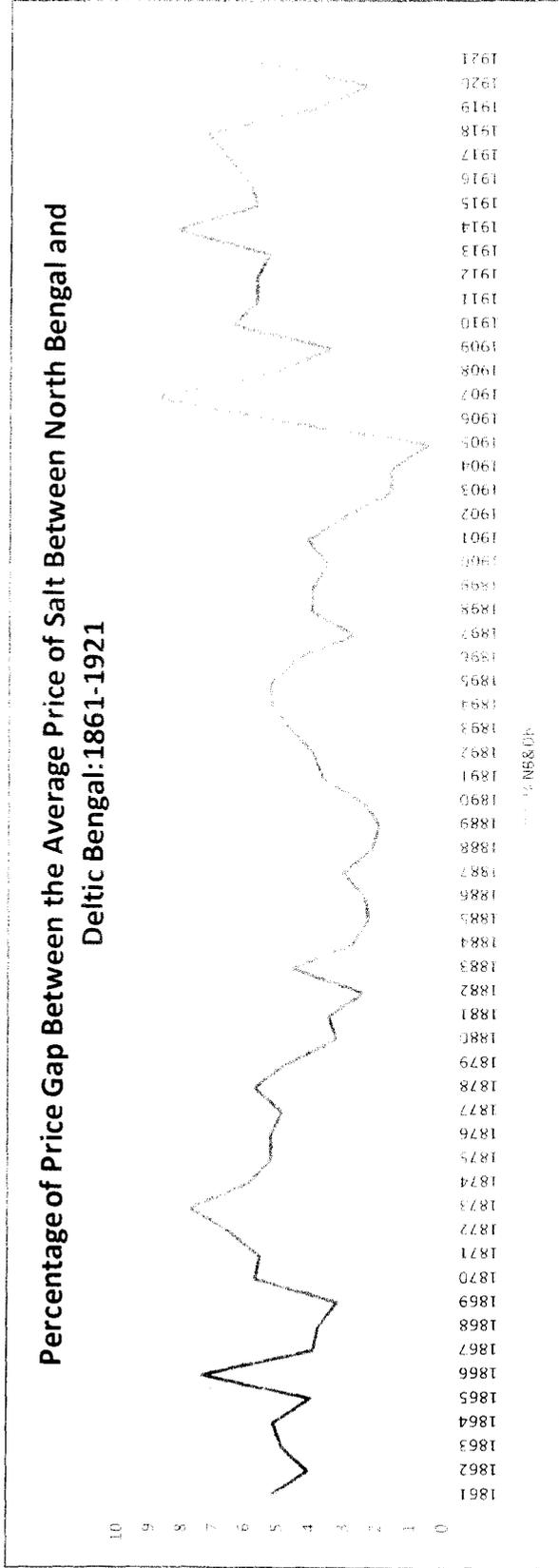


Table No. 3.6.13
Comparative CV of the retail Price of the Rice in Coochbehar State
(Studied Between the Subdivisions)

Selected Month and Year	Coochbehar	Dinhata	Mathabhanga	Mekliganj	Tufanganj	Mean	CV of the Retail Price of Common Rice
	(Rs./Mds.)	Rs./Mds.	Rs./Mds.	Rs./Mds.	Rs./Mds.		
21st Jan.1892	3.31	3.07	3.31	2.85	2.83	3.08	7.643209
22nd.Jul 1892	3.95	3.95	4	3.33	4	3.84	7.490678
21st Jan. 1893	3.06	3.07	3.31	3.05	2.5	3.00	10.0292
4th Feb.1893	4.40	4.93	4	3.33	4.44	4.22	14.18223
17th.Feb.1893	3.31	3.28	3.06	2.85	2.83	3.07	7.416678
8th,Jul.1893	3.95	3.33	4	3.33	3.95	3.71	9.362968
22nd.Jul.1893	3.95	4	4	3.33	3.60	3.77	7.885877
20th,Jan.1894	3.32	3.28	3.06	2.5	3.06	3.04	10.8345
27th,Jul.1894.	3.31	3.07	3.31	3.07	2.5	3.05	10.91335
18th,Jan,1895	2.83	3.06	2.5	2.5	2.83	2.74	8.870266
18th,Jan,1896	3.06	3.28	3.06	2.85	2.83	3.02	6.060473
30th Jan.97	4.95	5	4.89	4.44	5.71	5.00	9.12197
17th,July,97	5	4.89	6.53	5.71	6.53	5.73	13.83126
10th Jan1913	3.61	4.89	4.40	3.96	3.61	4.09	13.47859
11th,Jul,1913	5.68	6.58	5.62	5.70	5	5.71	9.87667
20th,Dec,1913	5	6.50	7.72	6.53	5	6.15	18.90123
10th,Jan,1914	5.62	6.50	5.67	6.53	5	5.86	11.0942
27th,Jun,1914	6.53	6.50	6.62	5.70	5.67	6.20	7.663255
11th,Jul,1914	6.46	6.50	6.62	5.70	6.63	6.38	6.095503
10th,Aug,1918	4	4.44	4	3.95	3.95	4.06	5.191565
10th,Aug,1919	6.58	7.92	6.57	7.74	6.53	7.07	9.898936

Source:

- Data for the year 1892 available in *The Coochbehar Gazette, 1893* as a 'Corresponding Return of the Last Year' in the same pages.
- *The Coochbehar Gazette,1893*, The Coochbehar State Press, Coochbehar,1894, pp.6-95
- *The Coochbehar Gazette,1894*, The Coochbehar State Press, Coochbehar, 1895,pp.4-73
- Data for the year 1895 available in *The Coochbehar Gazette, 1896* as a 'Corresponding Return of the Last Year' in the same pages.
- *The Coochbehar Gazette,1896*, The Coochbehar State Press, Coochbehar, 1897,pp.2-120
- *The Coochbehar Gazette,1897*, The Coochbehar State Press, Coochbehar, 1898,pp.2-120
- Data for the year 1895 available in *The Coochbehar Gazette, 1896* as a Corresponding Return of the Last Year in the same pages.
- Data for the year 1913 available in *The Coochbehar Gazette, 1914* as a 'Corresponding Return of the Last Year' in the same pages.
- *The Coochbehar Gazette,1914*, The Coochbehar State Press, Coochbehar,1915, pp.2-155

- Data for the year 1918 available in *The Coochbehar Gazette, 1919* as a 'Corresponding Return of the Last Year' in the same pages
- *The Coochbehar Gazette, 1919*, The Coochbehar State Press, Coochbehar, 1920, pp.50-90

Table No.3.6.14

CV of the Retail Price of Rice of the Different Subdivisions of the Coochbehar State .



Source: According to Table No 3.6.11

The North Bengal State Railway connected Haldibari in 1878. Though, Haldibari was far away from the capital and main land of the Coochbehar state, which also geographically detached by the River Teesta. Subsequently, the construction of Coochbehar State Railway completed during the year 1892. The line opened for goods traffic from the 15th September 1893, and the passenger traffic from 1st March 1894. The study obviously indicates that there is no positive impact of the foundation of the railways on the CV of the retail price of the common rice to the state. In North Bengal, the railway was established in 1878, but the CV of Northern Bengal and Bengal mainly stabled after 1883. In 1884 to 1912, for the 29 years the CV remarkably decreases, basically in North Bengal where the average CV is 7.8 but in Bengal, it is 10.62 for the same period. In Coochbehar state, before the foundation of the Coochbehar State Railway (up to 22nd July 1893) the CV of the retail price of the common rice is 9.14 and the post railway CV is 10.13. The post railways CV of the Coochbehar state is higher than the average CV of the selected districts of the North Bengal and lower than the average CV of Bengal. Therefore, we may argue that the retail price of the common rice in Coochbehar state already converged by the initial development of the

railways in North Bengal (in 1878) and as well the role of the conventional transport system was vital. It is interesting, the CV increases after the development of the railways, which indicates the negative impact. Probably, it has taken place owing to fluctuation of the production of rice for the seasonal variation.

3.6.4.2 Comparative CV of the Retail Price of the Salt in Coochbehar State:

We select the same subdivision within the Coochbehar state to analyze the role of the railway communication to reduce the price gap of common salt. The price of salt indicates in rupees per mound for the selected months of the mentioned years.

Table No.3.6.15
Comparative CV of the Retail Price of the Salt in Coochbehar State
(Studied Between the Subdivisions)

Selected Month and Year	Coochbehar (Rs./Mds.)	Dinhata (Rs./Mds.)	Mathabhanga (Rs./Mds.)	Mekliganj (Rs./Mds.)	Tufangang (Rs./Mds.)	Mean	CV of Salt
21st,Jan.1892	4	4	5	4.44	4	4.28	10.29772
22nd,Jul 1892	6.53	4	4	5	4	4.70	23.54451
4th Jan. 1893	4	4	7.78	5	5	5.15	30.0984
21st,Jan.1893	4	4	5	4.44	4	4.28	10.29772
3rd Feb,1893.	4	4	4	4.44	4	4.08	4.861017
8th,Jul,1893	4.35	4	3.95	4.44	4	4.15	5.590556
22nd,Jul.1893	4.35	4	3.95	4.44	4	4.15	5.590556
21st.Jan.1894	4.40	4.44	4	4	4.40	4.25	5.421206
3rd Feb,1894.	4.40	4.44	4	4	4.40	4.25	5.421206
4th,Aug.1894	4	4.29	4	4	4	4.05	3.253538
18th,Jan,1895	4	4	4	4.44	4	4.08	4.861017
18th,Jan,1896	4	4	4	4.44	4	4.08	4.861017
30th.Jan.1897	4.89	4.43	4.89	4.44	5	4.73	5.750551
17th,July,1897	4.89	4	4.89	5.71	5.69	5.03	14.05818
10th,Jan1913	2.33	2.5	2.20	2.5	2	2.30	9.194902
11th,Jul,1913	2.5	2.5	2.5	2.5	4	2.8	23.95787
20th,Dec,1913	2.33	2.5	2.5	2.5	2.34	2.43	3.621402
10th,Jan,1914	2.33	2.5	2.5	2.5	2.34	2.43	3.621402
27th,Jun,1914	2.19	2.5	2.5	2.5	2.32	2.40	5.719746
11th,Jul,1914	2.5	2.5	2.5	2.5	2.330663	2.46	3.070796
10th,Aug,1918	4.407713	5	6.570842	5	5	5.195711	15.59701
10th,Aug,1919	4	5	5	4.892966	4.892966	4.757187	8.968534

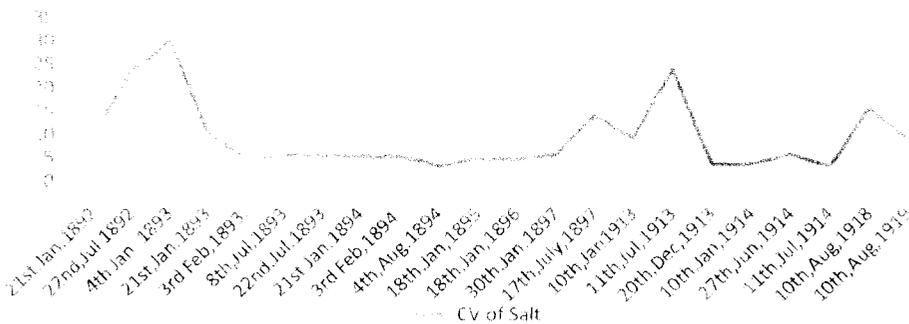
Source:

- Data for the year 1892 available in *The Coochbehar Gazette, 1893* as a 'Corresponding Return of the Last Year' in the same pages.
- *The Coochbehar Gazette,1893*, The Coochbehar State Press, Coochbehar,1894, pp.6-95

- *The Coochbehar Gazette, 1894* . The Coochbehar State Press, Coochbehar, 1895, pp 4-73
- Data for the year 1895 available in *The Coochbehar Gazette, 1896* as a 'Corresponding Return of the Last Year' in the same pages
- *The Coochbehar Gazette, 1896* , The Coochbehar State Press, Coochbehar, 1897, pp.2-120
- *The Coochbehar Gazette, 1897* , The Coochbehar State Press, Coochbehar, 1898, pp.2-120
- Data for the year 1895 available in *The Coochbehar Gazette, 1896* as a Corresponding Return of the Last Year in the same pages.
- Data for the year 1913 available in *The Coochbehar Gazette, 1914* as a 'Corresponding Return of the Last Year' in the same pages
- *The Coochbehar Gazette, 1914*, The Coochbehar State Press, Coochbehar, 1915, pp.2-155
- Data for the year 1918 available in *The Coochbehar Gazette, 1919* as a 'Corresponding Return of the Last Year' in the same pages
- *The Coochbehar Gazette, 1919*, The Coochbehar State Press, Coochbehar, 1920, pp.50-90

Table No.3.6.16

CV of the Retail Price of Salt Between the Subdivisions of the Coochbehar State.



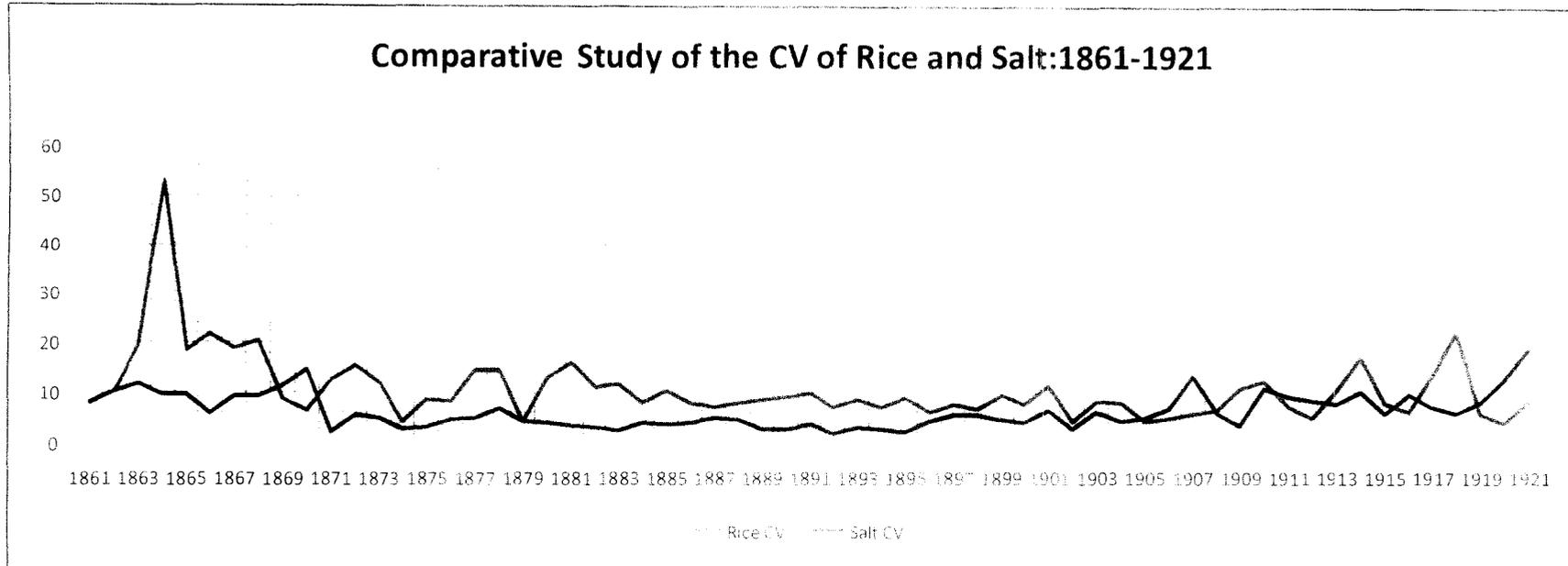
Source: Graph according to Table No 3.6.15

In Coochbehar state, in the pre railway period the CV of the salt is 12.89, and the CV of the post railway period is 7.82. Simply, we may say that the price of the salt was considerably converged after the foundation of the railway. However, the table significantly indicates the price greatly converged between 3rd February, 1893 and 30th January 1897, where the average CV is 5.06. Our graphical interpretation indicates the positive impact of the railway communication on the CV of the retail price of salt. Except few selected months (17th July 1897, 10th January 1913, 11th July 1913, 10th August 1918 and 1919), the CV is highly converged, and it is nearest to 5.

In the pre-railway period in North Bengal, the average CV of salt is 7.34, for the same period in Bengal; it is 8.17. In the post-railway period, the CV of North Bengal and Bengal is respectively 5.65 and 9.40. If we study the years 1871 to 1877, the price of salt already was converged by the conventional mode of the communication system. The CV of North Bengal exceptionally decreases after 1870, and the CV between 1871 and 1877 is only 3.82. It was possible due to river traffic facility between Calcutta and North Bengal, and the nature of product. The salt may stock any time within the year, and the traders may continue their stock for long time at the store house, and may sell when the price goes up. In case of rice, it was impossible to continue for longtime in the store house, and they are bound to sell within one year. The probability of the fluctuation of price was high in case of rice due to the monsoon variable. The production of the salt almost certain and does not depending on any natural variable. The price of salt extremely converged between the years 1871 to 1902; here the CV of North Bengal is 3.82 at the same period in Bengal is 7.48. In the year 1905 to 1921, the CV goes up and stands on 8.55 and 12.56 respectively, in North Bengal and Bengal.

The study as well significantly indicates that the CV of salt more converged than the CV of rice (see the Table No. 3.6.17). Because the production of rice varied according to monsoon or nature, at the same time the production of salt was certain. We already mentioned salt may stock for long time at the store house. Therefore, we may argue that the difference between the nature products obviously one of the main factors behind the difference between the CV of salt and rice.

Table No. 3.6.17



¹ Thomas Berry: *Western Prices Before 1861*. Cambridge, MA: Harvard University Press, 1943.

² Matthew Slaughter : “Does Trade Liberalization Converge Factor Prices? Evidence from the Antebellum Transportation Revolution.” *Journal of International Trade and Economic Development* 10, no. 3 (2001): 339–62.

³ . Jacob Metzger: “Railroad Development and Market Integration: The Case of Tsarist Russia.” *The Journal of Economic History* 34, no. 3 (1974): 529–50.

⁴ . Kevin O’Rourke, and Jeffrey Williamson: *Globalization and History: The Evolution of a Nineteenth-Century Atlantic Economy*. Cambridge, MA: MIT Press, 1999.

⁵ . John Hurd: Railways , Railways in Modern India, ed. Keer, Ian J, New Delhi ,Oxford University Press, 2001, pp. 155-57

⁶ . Michelle McAlpin: “Railroads, Prices, and Peasant Rationality: India, 1860–1900.” *The Journal of Economic History* 34, no. 3 (1974): 662–84.

⁷ Mukul Mukheerjee :“*Railways and Their Impact on Bengal Economy,1870-1920*”,Railways in Modern India, ed. Keer, Ian J, New Delhi ,Oxford University Press, 2001, pp141-146.

⁸ . Andrabi, Tahir and Kuehlwein, Michael, Railways and Price Convergence in British India (July 31, 2009). Available at SSRN: <http://ssrn.com/abstract=1442013> or <http://dx.doi.org/10.2139/ssrn.1442013>.

⁹ . Mukul Mukheerjee, Op Cit pp.141-42

¹⁰ . Appendix to the Report from the Select Committee on Salt , British India,1836,193, Cited in Balai Barui, The Salt Industry of Bengal:1857-180, K.P. Baggchi & Company , Calcutta 1985,p.142

Chapter No. 3.7

Communication and Its Impact on Living Condition

3.7. Communication and Its Impact on Living Condition: Study on Wage Structure and Purchase Power of Common Labourer.

In the previous chapter, we have discussed the role of railways in the process of commercialization of agriculture in North Bengal. How did the commercialization of agriculture affect and react on the economic condition of the agricultural labourer in North Bengal? It is an important query to us. Undoubtedly, our findings indicate that the process of commercialization effect on the agriculture economy of North Bengal. It accelerated the pressure to the *jotedar* and small farmer to produce according to the international and national market demand. How much the economic condition of the common people and laborer has improved by the expansion of agriculture market? This is a very important objective of our study. To attain the objective, we have selected the study on wage structure and purchase power of an agricultural laborer in North Bengal.

Theoretically, the development of wage mainly depends on the principle of 'demand and supply' of labour. In Bengal, as a whole the proportion of labourers was very low during the pre-British period, by 1872 it had increased to between twenty to thirty percent in various districts. Whereas the area under cultivation and demand for labour both inside and outside agriculture increased, the population remained virtually stagnant until the 1920s¹. The land-man ratio was favorable to wage hike. Therefore, the scarcity of the labour was the prime factor behind the wage hike after 1872. Several factors were also responsible for the scarcity of labour in Bengal. The development of area under the cultivation was the prime factor behind the rise of labour demand. The 'Enquiry into the Rise of Prices in India' has exposed that the railways have enabled the *rayots* to dispose of their surplus production at a fair price, thus increasing their income and their purchasing power, which is again shown by the increase in imports, especially in articles, which do not constitute bare necessities of life. The area under cultivation has generally increased by the advent of railways². Indian agriculture became linked to world trade cycles. As a part of this linkage, farmers' decision about which crops to plant were affected by prices set in International markets; for example, agriculture began to commercialize. Secondly, development of the tea plantation industry in Darjeeling and Jalpaiguri District and growth of the lucrative crops due to commercialization of agriculture, the demand of labourers remarkably increased. However, we have already discussed the role of communication, mainly railway to accelerate the process of commercialization in agriculture and the development of the tea industry in the northern Bengal. Thirdly, the growth of the mining industry, particularly coal-mining, made considerable demands on available labour. Fourthly, the growth of towns and industries necessitated a migration of population from a village to the towns. Fifthly, other activities such as road and rail building usually employed people on a seasonal ad-hoc basis. And lastly, the demand for labour outside India, for work in other parts of the British Empire- in Kenya (for rail construction), Sri Lanka (for tea plantation), Malaysia (for rubber plantation), West Indies (for sugar plantation) and so on – the main recruitment center for

which was Calcutta³. Hence, the factors like growth of mining industry, urbanization and industrial development all are highly related with internal and external development of a transportation system, where the role of the railway was dominant. Therefore, we have decided to study the wage hike and purchase power in the pre and post railway period of northern Bengal.

3.7.1. Impact of the Railway on the Wage Structure of the Common Agricultural Labourer:

First, we calculate the wage development in the districts of North Bengal to find realize the difference between pre and post-railway wage rate. Monthly wage rate is selected according to the wage of the able-bodied agriculture labourer in Rupee. It is selected to realize the economic condition of the marginal and majority population of the North Bengal. 'In the whole province of Bengal, out of every 1000 persons there were, at the last census, 715 dependent on agriculture, whereas in North Bengal 803 or approximately four-fifth of the population were engaged in agricultural pursuits'⁴. Before the foundation of the railway (1873-77) within five years, the average monthly wage of the Rangpur and Dinajpur district is respectively Rs.5.66 and Rs.4.35 where the average wage rate in Bengal is Rs.5.14. Clearly, the pre railway average wage rate in the Dinajpur district was comparatively low from the average of Rangpur and Bengal. After the foundation of the railway, within five years, the average wage rate remarkably developed in the Dinajpur district. After the foundation of railway within five years (1878-82), the rate of the increase in Dinajpur is 44.82%, whereas for the same period, the increase rate for the Bengal and Rangpur is accordingly 9.01% and 27.16%. As a whole, the average growth rate for the post railway period (1878-96) in the Rangpur and Dinajpur district and Bengal are respectively 27.58%, 63.33% and 17.60%. In 1911, the growth rate of the Rangpur and Dinajpur district is respectively 56.86% and 53.6% from the average (Rs.5.66 and 4.35) of the post railway period (1873-77). In 1916, within forty years (1877-1916) the growth rate is 64.2 % and 70.85% respectively for Rangpur and Dinajpur district. The Table No.3.7.1 and Table No 3.7.3 signify the wage variation in detail. We may also conclude that railway as well took an indispensable role to converge the wage rate in the districts of North Bengal.

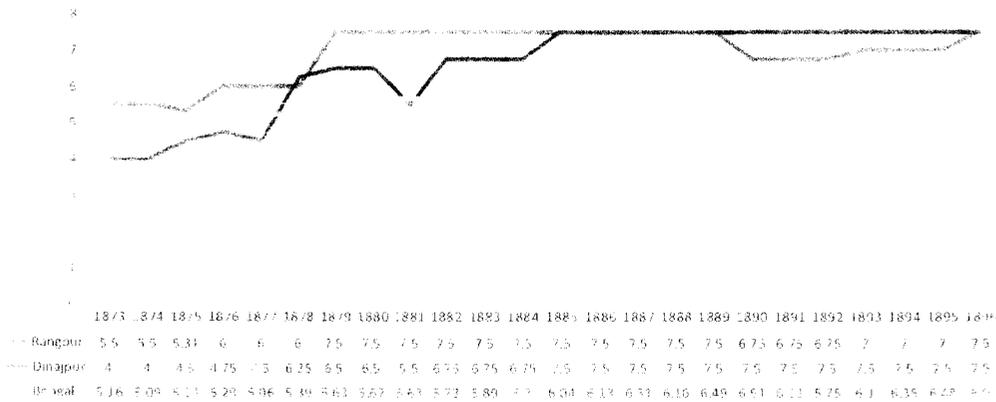
Table No.3.7.1
Monthly Wages of Able-bodied Agriculture Labourer: 1873-1896
(Value in Rupee per Month)

Year	Rangpur		Dinajpur		Bengal Average
	Min.	Max.	Min.	Max.	
1873	5.5		4		5.16
1874	5.5		4		5.09
1875	5	5.62	4	5	5.13
1876	6		4.5	5	5.29
1877	6		4	5	5.06
1878	6		5	7.5	5.39
1879	7.5		5	8	5.63
1880	7.5		6	7	5.67
1881	7.5		5	6	5.63
1882	7.5		6	7.5	5.73
1883	7.5		6	7.5	5.89
1884	7.5		6	7.5	5.7
1885	7.5		7.5		6.04
1886	7.5		7.5		6.13
1887	7.5		7.5		6.31
1888	7.5		7.5		6.16
1889	7.5		7.5		6.49
1890	6	7.5	7.5		6.51
1891	6	7.5	7.5		6.13
1892	6	7.5	7.5		5.75
1893	7		7.5		6.1
1894	7		7.5		6.35
1895	7		7.5		6.48
1896	7.5		7.5		6.9

Source: *Prices and Wages in India , Thirteenth Issue , Part I, Part –III ,Statistical Bureau, Government of India, Office of the Superintendent of Government Printing, India, Calcutta, 1897, Part –III, pp.289-304*

Table No. 3.7.2

Average Wage in Ranjpur, Dinajpur and Bengal

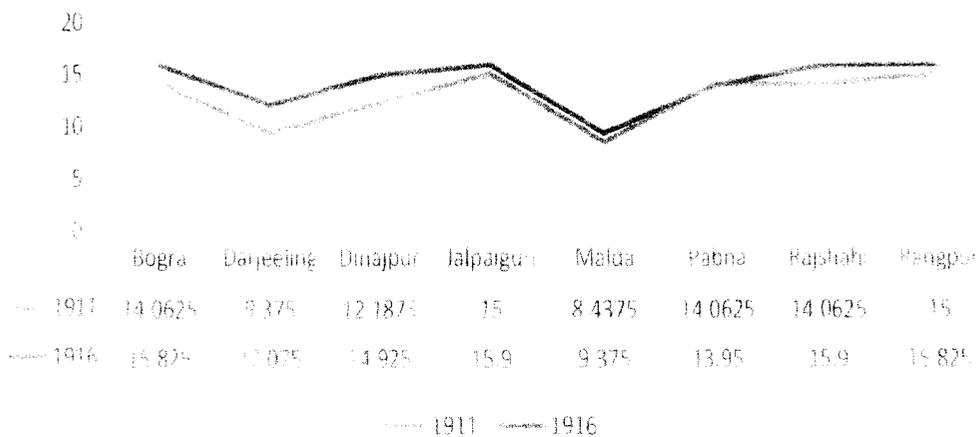


Source: Calculated According to Table No. 3.7.1

The wage surprisingly increased in the Dinajpur district, before the foundation of the railway it was lower than the average of Bengal and Ranjpur, but after 1885, the average monthly wage was stable at Rs.7.5 still 1896. The post-railway wage of the Rangpur and Dinajpur is comparatively better than the average wage of Bengal. According to J. A. Vas 'the material condition of the people had improved vastly. They were better fed, clothed and educated'. Here it is to be clear that the average wage of Bengal was calculated according to the wage of the 15 districts of Bengal (Bardwan, Midnapur, Calcutta, Murshidabad, Rangpur, Dinajpur, Dacca, Backerganj, Chitagong, Patna, Muzaffarpur, Monghyr, Purnea, Cuttack, Hazaribagh).

Table No. 3.7.3

Comparative Wage Structure of the Agriculture Labour: 1911 & 1916 (Value in Rupee Per Month)



Source: *Price and Wages in India, Thirty-seventh Issue, Department of Statistics, India. Published by order of the Governor-General in Council, Superintendent Government Printing India, Calcutta, 1923. Part - III, No 21(2), p. 180*

The above table as well indicates the variation of wage of the agricultural labourer according to district and year. The wage rate was comparatively low in Malda and Darjeeling district, but the others maintained parity. Dependence on migrant labourers as well as characterized the rural scene during this period. In Malda, railway also flung to open the ways for immigration into the thinly populated areas. *Santals* took this opportunity to come over to the *Barind* and engaged themselves in reclamation of waste lands⁶. Immigration and seasonal labour changed the land-man ratio of the Malda district. In the years 1911 and 1921, the density of the population was comparatively high from the other districts of northern Bengal (see the Table No. 3.7.11). The negative land-man ration declined the wage rate of the district. The census report also supports the above argument. 'The high density with lesser growth rate of population reasonably indicates that the pressure on the soil in this region is approaching the maximum⁷'.

3.7.2. Study on the Purchase Power of the Agricultural Labourer:

The wage may obviously indicate the trend of the economic condition of the common agricultural labourer, but not all. The increase of wage rate may not indicate fruitful economic development due to high inflation of daily essentials. In order to judge the economic effect, we decide to examine the purchase power or real wage of agriculture labour to test the hypothesis that the railways took a significant role to reduce the economic deprivation of the people of North Bengal. The maximum purchase power of a common agricultural labour is calculated by the maximum value of common rice in mound, in the districts of Rangpur and Dinajpur. The maximum monthly wage of agriculture labour in rupees is divided by the maximum value of one mound common rice in respective years. The findings are very essential to examine the pre, and post-railway purchase power variation. According to our findings, pre-railway average purchase power (in 1873-77) in Rangpur and Dinajpur district are accordingly 2.81 and 2.27 mounds common rice. After the railway foundation at Rangpur district, the average purchase value increases between the years 1878 to 1916, and the average is 2.89. Hence, the growth rate of the purchase power is 2.84% between the same years. In the Dinajpur district pre-railway average (in 1873 to 1877) purchase, value is 2.27. The average of the post-railway purchase power is 2.88 mounds, and the growth rate of the purchase power is 26.82%, comparatively better than Rangpur district. Though, the findings indicate the post-railway purchase power or real wage remarkably developed at the Dinajpur district. It is significant, though; the better facility of the railway developed in Rangpur district, but the development of purchase power during the post railway period is very nominal. However, we have to concentrate in another finding. Actually, the average of the post-railway purchase power is nearest to each other for both the districts. In Rangpur and Dinajpur districts, the values are accordingly 2.89 and 2.88 mounds, and the value of Rangpur is better than Dinajpur. Therefore, the foundation of the railway as well reduced the gap in purchase power between the districts of the North Bengal and helped to converge the price and wage rate. In Dinajpur district, the average growth rate between the pre (1873-77) and post railway (1878-1916) purchase power is 26.82%. The same for the Rangpur district is only 2.84%.

Table: 3.7.4

**Monthly Wages and Purchase Power of Able-bodied Agriculture Labourer:
1873-1896**

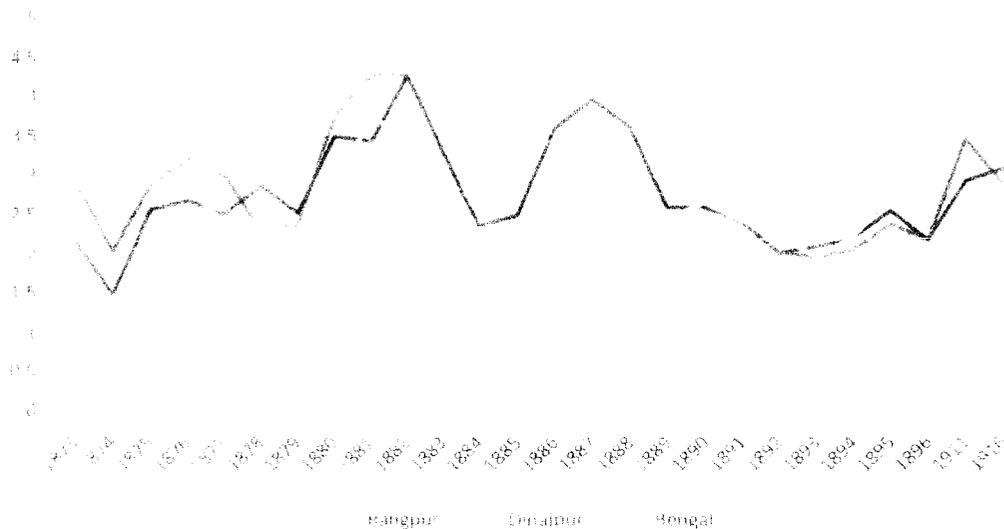
Year	Rangpur			Dinajpur		
	Maximum Wage of Able Bodied Agriculture Labour in Rs./Month	Value of Rice in Rupees Per Mounds	Purchase Power in Mounds	Maximum Wage of Able Bodied Agriculture Labour in Rs./Month	Value of Rice in Rupee Per Mounds	Purchase Power in Mounds
1873	5.5	1.87	2.941176	4	1.87	2.139037
1874	5.5	2.713	2.027276	4	2.713	1.474383
1875	5.62	1.955	2.87468	5	1.955	2.557545
1876	6	1.867	3.213712	5	1.867	2.678093
1877	6	1.996	3.006012	5	1.996	2.50501
1878	6	2.624	2.286585	7.5	2.624	2.858232
1879	7.5	3.172	2.364439	8	3.172	2.522068
1880	7.5	2.001	3.748126	7	2.001	3.498251
1881	7.5	1.749	4.288165	6	1.749	3.430532
1882	7.5	1.759	4.263786	7.5	1.759	4.263786
1883	7.5	2.266	3.309797	7.5	2.266	3.309797
1884	7.5	3.174	2.362949	7.5	3.174	2.362949
1885	7.5	3.021	2.482622	7.5	3.021	2.482622
1886	7.5	2.09	3.588517	7.5	2.09	3.588517
1887	7.5	1.891	3.966155	7.5	1.891	3.966155
1888	7.5	2.069	3.62494	7.5	2.069	3.62494
1889	7.5	2.892	2.593361	7.5	2.892	2.593361
1890	7.5	2.896	2.589779	7.5	2.896	2.589779
1891	7.5	3.129	2.396932	7.5	3.129	2.396932
1892	7.5	3.741	2.004812	7.5	3.741	2.004812
1893	7	3.593	1.948233	7.5	3.593	2.087392
1894	7	3.412	2.051583	7.5	3.412	2.198124
1895	7	2.952	2.371274	7.5	2.952	2.54065
1896	7.5	3.469	2.162006	7.5	3.469	2.162006
1911	13.125	3.802	3.45213	9.375	3.21	2.920561
1916	15.825	5.479	2.888301	14.925	4.848	3.078589

Source: **For the years 1873-1896** :Prices and Wages in India , Thirteenth Issue , Part I, Part –III ,Statistical Bureau, Government of India, Office of the Superintendent of Government Printing, India, Calcutta, 1897, Part I,pp.2-13, Part –III, pp.289-304.

For the years 1911 and 1916 :Price and Wages in India, Thirty- seventh Issue, Department of Statistics, India, Published by order of the Governor- General in Council, Superintendent Government Printing India, Calcutta, 1923. Part : III, No.21(2), p.180. Part-II-No.16, Retail Prices, Rice, pp. 72-78

Table No: 3.7.5

Comparative Purchase Power Between Rangpur, Dinajpur and Bengal



Source : For the years 1873-1896 :Prices and Wages in India : Thirteenth Issue , Part I, Part -III , Statistical Bureau, Government of India, Office of the Superintendent of Government Printing, India, Calcutta, 1897, Part I, pp 2-13. Part -III, pp.289-304.

For the years 1911 and 1916 :Price and Wages in India, Thirty- seventh Issue, Department of Statistics, India, Published by order of the Governor- General in Council, Superintendent Government Printing India, Calcutta, 1923. Part : III, No.21(2), p.180 Part II No.16, Retail Prices, Rice, pp. 72-78

The graphical presentation obviously indicates the positive impact of the foundation of railways for the initial years. In the year 1882, it reaches in the highest point for both the districts but after that it gradually moves downward. In the year 1887, it again goes up, and after that up to 1892, it continues a gradual degradation. The graph, though, slightly increases for the last years in 1911 and 1916. We don't have sufficient data for the year 1911 and 1916 to study the average purchase value of Bengal. We calculate the average price of common rice from the annual average price of common rice of the 38 districts of

Bengal, including the districts of Bihar, Orissa and Chota–Nagpur, and the average wage is calculated according to the mentioned 15 districts of Bengal (in the Table No.3.7.1). After that we divide the wage by the value of common rice. This graph strongly indicates that the purchase power surprisingly increased after 1878 in all over Bengal, though, the Bengal entered the railway era in 1854. We already mentioned in Bengal, as a whole the proportion of labourers was very low during the pre-British period, by 1872 it had increased between twenty to thirty percent in various districts. Whereas the area under cultivation and demand for labour both inside and outside agriculture increased, the population remained virtually stagnant until the 1920s⁸. So, the scarcity of labour was highly responsible for the wage hike after 1877 in North Bengal. As a whole, the purchase power of Rangpur and Dinajpur district is better than the average value of Bengal up to 1889, but after that the purchase value remarkably declined, sometimes it was below from the average value of Bengal. The average purchase value of Bengal was comparatively high from the Rangpur and Dinajpur district between year 1895 and 1896.

Therefore, we may conclude that the purchase power in Dinajpur district, remarkably increased during the post railway period. We calculate average purchase power before and after the foundation of railway in the two districts of North Bengal. The result is very significant; the growth rate of the purchase power after 1878 is 1.80%, 26.27% and 4.62% respectively for the Rangpur, Dinajpur and Bengal (1878-1896) within the 19 years.

Table: 3.7.6

Purchase Power of North Bengal (in the selected Districts): 1911-1925

	Year	Malda			Bogra			Rajshahi			Jalpaiguri		
		Monthly Wage	Value of Rice in Rs./ Mounds	Purchase Power in Mounds	Wage	Price	Purchase Power in Mounds	Wage	Price	Purchase Power in Mounds	Wage	Price	Purchase Power in Mounds
1	1911	11.25	3.27	3.43	14.06	3.271	4.29	14.06	3.493	4.02	-	-	-
2	1916	9.37	5.11	1.83	14.81	5.548	2.66	15.56	5.587	2.78	-	-	-
3	1925	11.25	5.68	1.97	-	-	-	-	-	-	22.5	6.61	3.40

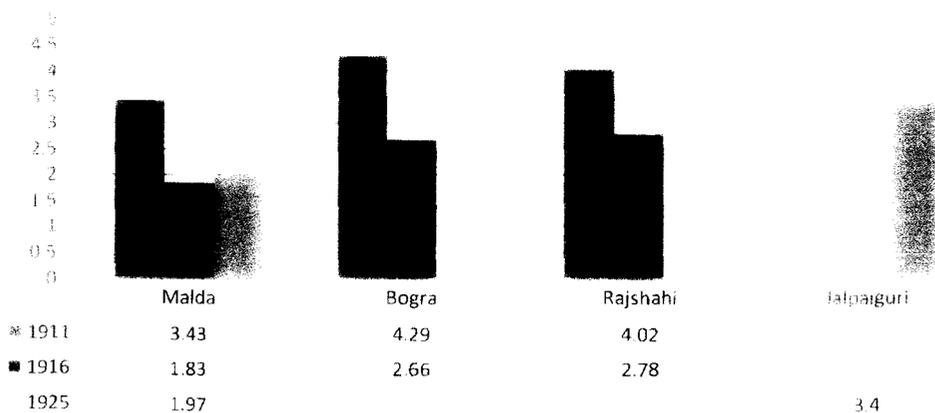
Source: For Sl. No. 1&2 :Price and Wages in India, Thirty- seventh issue, Department of Statistics, India, Published by order of the Governor General in Council, Superintendent Government Printing India, Calcutta, 1923. Part : III. No.21(2), p.180. Part II-No.16, Retail Prices, Rice, pp. 72-78

For Sl. No.3: Census of India 1951, Vol-VI, West Bengal Sikkim and Chandernagore, Part –IA-Report, pp. 96,106.

According to Table No 3.7.4, in 1911, maximum purchase power in the Rangpur and Dinajpur district was respectively 3.45 and 2.92. In the Table No.3.7.3, for the year 1911, we calculate the average wage of the all selected districts. In the Table No. 3.7.6 average purchase power for the year 1911 was comparatively better in the Bogra and Rajshahi district. However, in 1916, the purchase power highly decreased due to the price hike of the rice, conversely; the wage was proportionately static. The finding as well indicates that the purchase power of Malda district extremely reduced after 1911. In case of Jalpaiguri, in 1925, it was better than. Therefore, we may assume that, the economic condition according to purchase power or real wage highly varies according to time and place. It became worse after 1911. Table 3.7.7 indicates the graphical trend of the purchase value in the four selected districts of the North Bengal.

Table No. 3.7.7

Comparative Purchase Power in the Selected Districts of North Bengal



Source: According to the Data of Table No. 3.7.6

3.7.3. Growth Rate of the Purchase Power:

Table No. 3.7.8

Growth Rate of the Purchase Power and Cost of Rice in respect of the year 1911

Year	Malda			Bogra			Rajshahi		
	Monthly Wage in Rs.	Value of Rice in Rs./ Mounds	Purchase Power in Mounds	Monthly Wage in Rs.	Value of Rice in Rs./ Mounds	Purchase Power in Mounds	Monthly Wage in Rs.	Value of Rice in Rs./ Mounds	Purchase Power in Mounds
1911	11.25	3.27	3.43	14.06	3.271	4.29	14.06	3.493	4.02
Percentage of growth in 1916	-20.04	36.00	-87.43	5.06	41.04	-61.27	9.64	37.47	-44.60
Percentage of growth in 1925	0	73.70	-42.56						
	Rangpur			Dinajpur					
	Monthly Wage in Rs.	Value of Rice in Rs./ Mounds	Purchase Power in Mounds	Monthly Wage in Rs.	Value of Rice in Rs./ Mounds	Purchase Power in Mounds			
1911	13.12	3.80	3.45	9.37	3.21	2.92			
Percentage of growth in 1916	20.57	44.10	-16.33	59.2	51.02	5.41			

Source: The Percentage of Growth calculated according to Table No .4 and 6

This is very significant that the purchase power remarkably declined after 1911; it extremely declined in all the selected districts of North Bengal except the Dinajpur district. Where the growth rate of purchase power is 5.41% between 1911 to 1916. It was possible owing to comparatively batter growth of the monthly wage (59.2%) from the cost of rice (51.02%). In Malda, when the value of common rice increased 36% and 73.70% respectively for the years, 1916 and 1925, at the same time wage declined 20.04% and 0% for the same years. In Bogra district, within five years (01911-1916) the value of common rice increased extremely (41.04%) however, the growth rate of the monthly wage is only 5.06%. The above table indicates the same trend for other districts also, where the growth rate of the cost of the common rice is more than two and three times double from the wage hike.

3.7.4. Causes behind the Decline of Wage Rate and Purchase Power:

The decline of purchase power basically occurred due to stability and turns down of laborer wage, conversely; the price of the common rise remarkably increased during pre and post-world war period (see the Table No.3.7.8 and 3.4.16). Hypothetically, we accepted that

the wage structure and purchase power of the common labourer significantly improved due to commercialization of agriculture with development of railways in North Bengal. Our findings clearly indicate that at the initial stage 1878 to 1888, both positively improved, but after that the wage rate and purchase power not developed as we hoped. There are several factors were responsible behind the significant decline of the wage rate.

Table No. 3.7.9
Percentage of the Comparative Growth of Population Density

Place	Person/ Square Mile In 1872	Growth of Density in respect of the Year 1872 (in Percentage)							
		1881	1891	1901	1911	1921	1931	1941	1951
Malda	323	4.43	17.81	25.57	35.65	34.48	37.64	46.78	52.07
Coochbehar	403	11.62	7.99	6.06	10.04	10.04	15.51	16.90	20.51
Jalpaiguri	85	36.09	53.55	62.88	69.53	70.89	72.66	76.12	77.92
WestDinajpur	290	1.36	5.22	11.85	21.19	18.07	23.28	31.11	44.237
Darjeeling	79	38.75	57.52	62.01	64.25	66.52	70.30	74.84	78.70
West Bengal	438	1.79	7.20	14.11	19.03	17.04	23.02	37.69	45.18

Source: Census of India Vol.-VI, West Bengal, Sikkim and Chandernagore, Statement 1.32, p. 169,174 &175.

3.7.4.1. Negative Land- Man Ratio :

Biblab Dasgupta (1984) has argued the conditions of labour-scarcity in the factories in the towns, and in construction and other non-agricultural activities in the villages continued until the 1920s, after which the growing population made its impact. In Bengal, with this population increase, the land-man ratio changed dramatically. Whereas, during the nineteenth century, with the expansion of cultivation for the commercial crops and depletion of population because of famines and epidemics, the land-man ratio was highly favorable to man. In the first half of the twentieth century, the favorable land-man ratio reversed due to high population growth⁹. Afterward, the land–man ratio was continuing against the labourer.

The above table indicates the comparative growth rate in percentage, between the selected districts of North Bengal and West Bengal in respect of year 1872. Except, the Coochbehar state, all other districts maintained a considerable increase compare to West

Bengal. Though, the growth rate of the density was comparatively static in the Coochbehar but the conversion of waste land to agriculture land was as well in the utmost limit. In 1872, the area under cultivation was 24, 82,183 *bigha*, the same area increased to 25, 43,396 *bigha* in 1927. The area under cultivation increased only 2.46% within 56 years. At the same time, the amount of land revenue increased 394.03% for the same years (Rs.364140 in 1872 and Rs.1798984 in 1927)¹⁰. In West Bengal as a whole, in the first half of the twentieth century, the population density increased from 438 persons per square mile in 1872 to 541 in 1911. The growth rate is 19.03% in respect of year 1872. In the northern districts of Bengal, the growth rate of the population density was comparatively two and three times double from West Bengal except in the West Dinajpur and Coochbehar state. It caused due to enormous migration in the northern districts of Bengal . The table No.3.7.9 significantly indicates the growth rate of Japiguri and Drjeeling district is exceptionally high. In case of Darjeeling, a large percentage of non –Indian migrated mostly from Nepal.

3.7.4.2. Migration:

The negative land-man ratio caused due to enormous migration in the northern districts of Bengal . In case of tea industries or plantation (mainly in Jalpaiguri and Darjeeling District), even in 1921 nine tenths came from outside- Oraons, Mundas, Santal and Kharias- to labor in the plane, while the Nepalis worked in the hill¹¹. In North Bengal, between the years 1891 and 1921 enormous migration changed the demography of this region (See the Table No. 3.7.10).That undoubtedly affected the land-man ratio due to high population growth, at the same time the area under cultivation was stagnant, which reduced the scarcity of labour.

Table No. 3.7.10
Migration in North Bengal (1891-1921)

Migration at Coochbehar(1891-1921)				
	From adjacent districts		From other districts	
Year	Male	Female	Male	Female
1891	12,997	15,192	3,262	1,201
1901	9165	12531	12668	2225
1911	11000	13000	5000	2000
1921	9000	12000	10000	6000
Migration at Jalpaiguri (1891-1921)				
	From adjacent districts		From other districts	

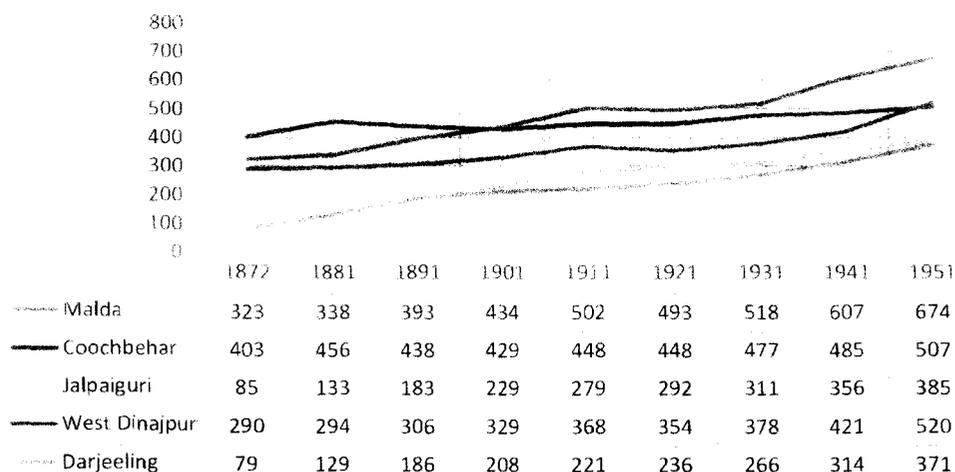
Year	Male	Female	Male	Female
1891	30920	27835	12431	7641
1901	24354	23856	65272	48636
1911	18000	15000	15000	10000
1921	21000	19000	5000	4000

Migration at Dinajpur(1891-1921)				
Year	From adjacent districts		From other districts	
	Male	Female	Male	Female
1891	22670	18819	9308	5894
1901	13901	13319	60243	34871
1911	19000	16000	12000	6000
1921	12000	13000	10000	7000

Source: A. Mitra, *West Bengal District Hand Books, Calcutta, 1951, Cooch Behar, P. xxxvi. Jalpaiguri iii, West Dinajpur, p. xii. Cited in Basu Op.cit. p. 52*

The table below is indicating the growth of density (person per square mile) in the selected district of North Bengal.

Table No. 3.7.11
Variation in Density (persons per square mile)
in the Selected Districts of North Bengal
(1872-1951)



Source: *Census of India Vol.-VI, West Bengal, Sikkim and Chandernagore, Statement 1 32, p. 174 & 175.*

3.7.4.3. Available Seasonal Labour:

Table No. 3.7.12 clearly indicates an important factor behind the migration of labour in North Bengal. In 1878, the introductions of railways in North Bengal open up the door of North Bengal, as well as due to vast fertile land, prospectus of trade and high rate of food productions because of First World War, were the factors behind the huge migration and direct investment in agricultural land (See Table No. 3.7.10). Due to commercialization of agriculture and development of the railways, seasonal labours were also available from the adjacent provinces and districts of the North Bengal. Sometimes, work culture was as well responsible for it, because the local laborers would not like the work like digging and construction of roadway¹² and railway. In Coochbehar state, people are mostly agriculturists. However, they were not willing to do every type of work. There was also seasonal immigration of agricultural labourers from Bihar¹³. 'At the beginning, for the construction of railway, the poor people did not agree to work with white Europeans due to fear of losing their purity of caste, but the lower-class people accepted the job due to hungry and poverty'¹⁴. According to another observation in the jute industry at Raiganj near about 50 to 100 lower class migrated coolies employed¹⁵. That also accelerated the invasion of labour and seasonal laborer in the Northern Bengal. Expansion in the railway communication not only opened out and enriched the country, but they brought many labourers into the district (Rangpur).¹⁶ Undoubtedly, railways took an essential role to converge the wage distribution in India, which helped the laborer of low wage districts to shift into comparatively better wage districts. At the same time, definitely, the migration of a laborer from different districts and provinces restricted the further development of wage structure in North Bengal.

Table No. 3.7.12

Wages in Some Nearest Districts and Provinces of North Bengal

Year	Patna		Muzaffarpur		Munger		Purnea		North Western Province (Average Wage)	Oudh (Average Wage)
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
1873	3	4			3		4		3.87	3.5
1874	3	4			3		4		4.21	3.1
1875	3	4	4	5	3		4.75		4.13	3.33
1876	3	4			3		4.75		4.2	3.33
1877	3	4	2	3	3		4.75		4.23	2.9

1878	3	4	2	3	3		4.69	5.62	4.21	2.94
1879	3	4	2.5	4	3		4.69	5.62	4.01	3.08
1880	3	4	2	3	3.75		4.69	5.62	4.17	3.09
1881	3	4	2	3	3.75		4.69	5.62	4.11	3.09
1882	3	4	2	3	3.75		4.69	5.62	3.92	2.64
1883	3	4	3	5	3.75		4.69	5.62	3.84	2.78
1884	3.5	4	3	5	3.75		3.34		3.87	2.94
1885	4	5	3	4	3.75		4.69	5.62	4.09	3.1
1886	4	5	3	4	3.75		4.69	5.62	4.16	3.16
1887	4.5	5	3	5	5.62		4.69	5.62	4.37	3.19
1888	4	5	3	5	5.62		4.69	5.62	4.44	3.52
1889	4	5	3.75		5.62		5.62	6.56	4.38	3.52
1890	4	5	3	5	5.62		5.62	6.56	4.38	3.52
1891	4	5	3.75	5.62	5.62		4.69	5.62	4.47	3.52
1892	4	5	3.75	5.62	2.75		4.69	5.62	4.28	3.19
1893	4	5	3.75	5.62	2.75	4.69	4.69	5.62	4.59	3.52
1894	4	5	3.75	5.62	3.75	7.5	3.75	5.62	4.81	3.52
1895	4	5	3.75		3.75	7.5	3.75	5.62	4.87	3.52
1896	4	5	4	6	3	4	5.62	7.5	4.06	3.2

Source: Prices and Wages in India , Thirteenth Issue . Part I, Part –III ,Statistical Bureau, Government of India, Office of the Superintendent of Government Printing, India, Calcutta, 1897, Part –III, pp.289-304.

3.7.4.4. High Tariff Policy and Land Transfer:

It is true that the commercialization of land in the North Bengal started by the end of the 19th century. Table No.3.7.13 represents the various groups to whom the occupancy holdings were sold in the Jalpaiguri district. The table clearly shows the number of land transaction constantly increased at the end of 19th century due to the commercialization of agriculture. Upendra Nath Barman claims that for small and the middle *joteders* it was extremely difficult to get even the little cash required to pay *zamindari tax*, many *jotedars* were forced to sell off their land¹⁷. If we study the condition of Coochbehar state, then we may easily understand why did the commercialization of agriculture failed to improve the economic condition of the common labourer. Due to high rent policy like the colonial government, yearly more than three hundred defaulting *jotes* would auction in Coochbehar state¹⁸. We already discussed the growth rate of the population density was comparatively static in the Coochbehar but the conversion of waste land to agriculture land was as well in an extreme limit. That is why the extension of the new area under cultivation almost locked. In 1872, the area under cultivation was 24, 82,183 *bigha*, the same area increased to 25, 43, 396 *bigha* in 1927. The area under cultivation increased only 2.46% within 56 years. At the same time, the amount of land revenue increased 394.03%, which was undoubtedly gigantic

growth. For the year 1872, the amount of land revenue was Rs.364140 and in 1927, it was Rs. 1798984 ¹⁹.

Table No. 3.7.13
Sale of Occupancy Holdings in Jalpaiguri: 1898-1905

Year	No. of Transactions	Mahajan	Landlord of the holding	Other Landlord	Raiyats	Others
1898-99	213	-	1	-	213	1
1899-1900	915	6	-	2	907	-
1900-1	1122	27	87	61	910	202
1901-2	1838	30	6	70	1972	38
1902-3	1752	22	8	218	1644	16
1903-4	1961	48	5	514	1377	47
1904-5	1966	6	16	693	1586	42

Source: P/9389, *Proceedings of the Board of Revenue (Bengal)*, Sept.1914,p. 72. Cited in Subhajyoti Ray, *Op.cit.p.143*.

According to another observation, "the commercialization of agriculture and the development of the land market before the First World war, under combined influence of high demands of cash revenue and a rise in prices, began a process of land transfers which helped the bigger *jotedars* to strengthen and consolidate their position. They became the main beneficiaries of the process. On the other hand, many smaller tenants, unable to meet the high pitch of revenue /rent, preferred to sell their land and enter into inferior tenancies."²⁰

3.7.4.5. Market System:

Another important factor was the system that deprived the cultivators. Jute was the most important commercial product of North Bengal. In jute cultivation, sometimes the poor cultivators were bound to receive advances from *mahajans* through their *paikars* and *beparis* at the time of sowing. According to O'Malley, 'a rate (selling) is fixed, generally much below the market rate, at which the cultivator agrees to sell all his produce to the *mahajans* and agrees to pay him one to two seers of jute each rupee advanced. The cultivator thus gets tied hand and foot and if the crop fails or is short, he is faced with ruin'²¹. In the first decade of the 20th century, J.A. Vas also observed existence of the *Dadni*

system or advanced payment in jute cultivation. According to Vas, 'the produce (jute) available for export was bought up by the brokers, who made advances to the cultivators²²'. It was very seldom that a cultivator personally brought his produce for sale in the market or *hat*. Itinerant traders called *paikars* and *pharias* moved about from a house to house for buying the jute from the cultivators. The peasant did not go to the market. Instead, the market came to the peasant, specially in case of a cash crop like jute. Here the role of the middle man was also essential to achieve reasonable price of the product²³. The system has been reflected wonderfully in the regional *Bhawaiya* song of the North Bengal:

'*Dari-palla gharot kori*

Paikar berai tari tari

Kon Baritey Koshta bechaibey?'²⁴

The song means the *paikars* or the itinerant traders wander village to village with a measure scale to find out probable sellers of jute. The song also signifies the importance of jute as a cash crop in North Bengal.

3.7.4.6. Adverse Effect of the Plantation Industry:

The table below indicates the massive growth of the area under tea plantation industry in the northern districts of North Bengal. We already discussed the development of tea industry was initiated by the colonial commercial interest. It had no as such a positive impact on the people of North Bengal. Instead, it adversely affected the rural economy of North Bengal.

Table No. 3.7.14

Growth Rate of Plantation Area in Jalpaiguri and Darjeeling district : 1866-1931

Darjeeling District				Jalpaiguri District			
Sl. No.	Year	No. of Gardens	Area in Acre	Sl. No.	Year	No. of Gardens	Area in Acre
1	1866	39	10000	11	1876	13	818
2	1870	56	11000	12	1881	55	6230
3	1874	113	18888	13	1892	182	38583
4	1885	175	88499	14	1901	235	76403
5	1895	186	48692	15	1907	180	81338
6	1905	148	50618	16	1911	191	90859
7	1910	148	51281	17	1921	210	112688
8	1915	148	54024	18	1931	191	132074
9	1920	148	59356				
10	1925	148	59356				

Source: **For Sl.No.1 to 6:** O'Malley, *Bengal District Gazetteers, Darjeeling, and Op.cit.p.74*

For Sl.No.7 to 10: J.A.Dash, *Bengal District Gazetteers, Darjeeling, and Op.cit.p.114*

For Sl.No.11to 15: J.F. Grunning, *Eastern Bengal and Assam District Gazetteers , Jalpaiguri, Op.cit.p134-35.*

For Sl.No.16to 18: *Census of India 1921, Vol.5,Part 2,p.402, Census of India 1951,Vol.6, Part 1 A Report,p.623, Cited in Virginus Xaxa : Economic Dualism & Structure of Class Op.cit.p.103*

The common labourer of North Bengal had no interest on the work on plantation industry. Therefore, huge migrated tribal labourer from Chotonagpur and Sntal Pargana would recruit in the plantation industry. Thus, the plantation industry failed to reduce the pressure on land; instead, it restricted the further growth of the area under cultivation. Due to huge profit in the plantation industry, the area under plantation developed aggressively, which reduced the land- man ratio in the agricultural field.

Secondly, huge migrated labour in the plantation sector had no deep impact on the agriculture market of the North Bengal due to labour exploitation by the low-wage rate. Most depressing to the local market was the poor and stagnant wage rate of labourers in the tea estates. The structure of the wage was, in fact, so low that the wage of an individual was hardly sufficient to maintain himself and his family. It was therefore evolved as an alternative, was the exploitation of family labour in tea plantation estates of north-east India. In this context, it may be observed that the wage structure introduced around 1891 had remained intact till almost independence when the basic wage was raised from four to six *anas* for male and three to five *anas* for female workers. The plantation estates thus kept the labourer contended with the lowest possible wage even though there was a steady rise in the price of food-grains and other commodities throughout North Bengal²⁵.

Thirdly, there was this system of subsidized consumer-supplied (rationing) to the plantation population that was a fairly well established practice in the estates of North Bengal. Labourers and others were supplied with rice, cereals, mustard and kerosene oil, salt, molasses, etc. At the same time; the plantation estates hardly obtained these commodities from the nearest districts or its neighborhood. On the contrary; they were purchased from the big trading companies that obtained these largely from the southern parts of Bengal province or even from other provinces²⁶. Native farmers and traders did not get the benefit.

Simultaneously, it is significant that the higher post of the companies probably not opened for the educated natives. The largest scope of employment was under the tea gardens of the *tarai* and *duars* but unfortunately, the picture of the natives in the tea industries as an upper post official was undoubtedly miserable. O'Malley, a famous British

administrative historian points the same argument. 'Except in the *Tarai*, almost all the managers and assistant of the estates are Europeans. It is a remarkable fact that, though educated native are much cheaper than Europeans; it has not been found economical to employ them generally, although here and there a few natives have done remarkably well, and have proven themselves worthy of full trust in positions of responsibility. The result is that although the industry in the hills is now fifty years old, it is still almost in the hands of Europeans.²⁷

The area under cultivation has generally increased by the advent of railways. In Bengal, as a whole the proportion of labourers was very low during the pre-British period, by 1872 it had increased to between twenty to thirty percent in various districts. Whereas the area under cultivation and demand for labour both inside and outside agriculture increased. The land–man ratio was favorable to wage hike. Therefore, the scarcity of the labour was the prime factor behind the wage hike after 1872. However, the condition was no longer same. In North Bengal, between the years 1891 and 1921 enormous migration changed the demography of this region .That undoubtedly affected the land-man ratio due to high population growth, at the same time the area under cultivation was stagnant, which reduced the scarcity of labour

Hence, we may argue that the railways undoubtedly helped to accelerate the commercialization of agriculture in the North Bengal, but the fruit of the commercialization only restricted to the bigger *jotedars* and very little for the commoners. Land–man ration was against the labourer due to huge migration and new settlement. Simultaneously, the development of railway accelerated the easy migration of seasonal labour. Both favored the *jotedars* to achieve available chief labourer. The consideration of the wage hike was very thin because the *jotedars* also bound to pay high rent for every year²⁸. For these reasons, the cream of the commercialization exactly did not filter to the common agriculture laborers; instead, it established preferential and superior right of some persons over the majority. Undoubtedly, here the further seed of peasant unrest was sown, which later took utmost shape in the *Tebhaga* movement of North Bengal.

¹ . Agricultural Labour under Colonial, Semi-Capitalist and Capitalist Conditions: A Case Study of West Bengal Author(s): Biblab Dasgupta Reviewed work(s): Source: Economic and Political Weekly, Vol. 19, No. 39 (Sep. 29, 1984), p.A-133.

² . S.C. Ghose: A Monograph on Indian Railway Rates , Superintendent Government Printing , Calcutta 1918,p.iii

³ . Biblab Dasgupta, Op. cit.p. A-133

⁴ . O'Malley .Pabna, Op.cit.p.80.

⁵ . J. A. Vas, Eastern Bengal and Assam District Gazetteers ,Rangpur, 1911, reprinted in India 1992. Indian Publishers' Distributors , Delhi,P.35

⁶ . District Census Handbook, Malda, 1961, p.xv.

⁷ . District Census Handbook, Malda, 1961.p.xvii.

⁸ . Biblab Dasgupta, Op. cit.p. A-133.

⁹ . Biblab Dasgupta, Op. cit.p. A-133 and A-139.

¹⁰ . K.C. Ganguly: Final Report on the Survey and Settlement Operation in the Coochbehar State, 1913-1927,Coochbehar State Press, 1930.p.56.

Cited in Prajna Paramita Sarkar : The Changing Trajectory of the Land-man Relationship in the Princely State of Coochbehar : The Political Economy in Perspective (1773-1949), in the New Aspect on Indian History ,Local, Regional, National, Ed. by Ashim Kumar Sarkar and Kaushik Chakraborty, Reader Service, Kolkata, 2011,p.198.

¹¹ . Biblab Dasgupta, Op. cit.p. A-133.

¹² . *The Annual Administrative Report of the Coochbehar State for the Year 1878-1879*, Coochbehar State Press, Coochbehar, 1880, p.69.

¹³ . Bijay Bihari Som: Agrarian Changes and Agricultural Labourers in Cooch Behar Economic and Political Weekly, June 11, 2005,p. 2439.

¹⁴ . Pradosh Chowdhury : Samajchitre Bharatia Rail ,Gangchil, Kolkata,2012.p.28 (Bengali)

¹⁵ .F.W. Strong: Eastern Bengal District Gazetteers , Dinajpur, Op cit p.98.

¹⁶ . J. A. Vas, Eastern Bengal and Assam District Gazetteers ,Rangpur, 1911, reprinted in India 1992. Indian Publishers' Distributors , Delhi,P.35.

¹⁷ . Upendra Nath Barman: Uttar Banglar Sekal O Amar Jiban Smriti, Jalpaiguri, (Bengali)1985,p.14

¹⁸ . The Coochbehar Gazette for the years 1892, 1893, 1894, 1897,1913,1914 and1918, Coochbehar State Press. Coochbehar.

¹⁹ .K.C. Ganguly: Final Report on the Survey and Settlement Operation in the Coochbehar State, 1913-1927,Coochbehar State Press, 1930.p.56.

Cited in Prajna Paramita Sarkar : The Changing Trajectory of the Land-man Relationship in the Princely State of Coochbehar : The Political Economy in Perspective (1773-1949), in the New Aspect on Indian History ,Local, Regional, National, Ed. by Ashim Kumar Sarkar and Kaushik Chakraborty, Reader Service, Kolkata, 2011,p.198.

²⁰ . Subhajyoti Ray, Op.cit.p.161.

²¹ . O'Malley, Bengal District Gazetteers, Pabna, Op cit p.55.

²² . J. A. Vas, Eastern Bengal and Assam District Gazetteers ,Rangpur, 1911, reprinted in India 1992. Indian Publishers' Distributors , Delhi,P.95

²³ O'Malley, Bengal District Gazetteers, Pabna, Op cit p.54.

²⁴ . Quoted in Sukhbilas Barma, '*Loksangitey Coochbehar*' in Ananda Gopal Ghosh (ed.), Madhuparni,Coochbehar Issue, Calcutta,1990,pp.362-363. (Bengali)

²⁵ . Virginius Xaxa: Colonial Capitalism and Underdevelopment in North Bengal Op, cit p.1662.

²⁶ . Messers Still Brothers supplied 1,35,000 quintals of food grains to the tea estate of Jalpaiguri in 1961.O f this, 44,100 quintals were procured from the government, 10,000 quintals from Assam and 80,900 quintals from Orissa. See Report of the Dooars Branch of Indian Tea Association, 1961, p xvii. Cited in, Virginius Xaxa: Colonial Capitalism and Underdevelopment in North Bengal Op, cit p.1665.

²⁷ . O'Malley : Bengal District Gazetteers ,Darjeeling, Op.cit.p.84

²⁸ . 'The commercialization of agriculture was encouraged by the high pitch of cash rents in the initial period and the constant increase of rents in each successive resettlement until 1936.'

Subhajyoti Ray, Op.cit.p.146.

Chapter No. 3.8

Railways Impact on the Forest Ecology of North Bengal

3.8 Railways Impact on the Forest Ecology of North Bengal:

Scholars studying the forest history of colonial India can be generally divided into two groups based on whether they see the colonial period as forest destructive or not. The first group of forest historians glorifies the colonial stage as bringing a halt to the deforestation that had taken place before¹. They opined that with the advent of scientific forestry, deforestation was brought under control. Grove has argued that there was significant deforestation in the pre-colonial period that continued into the colonial phase also². As a whole, this group of scholars sees the pre-colonial phase as a forest destructive period. The second group of forest historians, led by Ramachandra Guha, argues that the British period was a watershed in the ecological history of India as unprecedented and large-scale deforestation took place³. For Guha and Gadgil in the pre-colonial phase, there was an ecological balance due to the customary practices of the local forest communities⁴. More recently, Guha's ecological equilibrium thesis of pre-colonial India has been condemned by scholars⁵. According to a scholar like J. Moore, it is not wrong to argue that in the pre-colonial phase, the ecological crises were limited to a small area and took more time to develop⁶.

Also, not all regions in colonial India experienced the ecological impact of British rule to the same extent. There were some regions that saw radical and permanent ecological changes more than others, during the early colonial rule. This was particularly so in ecologically weak areas such as the Himalayas, which Ramachandra Guha focuses on⁷. Thus, his study about deforestation showing a qualitative and quantitative watershed with the pre-colonial phase is mostly correct. One important changing feature of colonial phase was the rapid removal of resources from India by the colonial authority. This took place especially in the second half of the nineteenth century when the Indian economy was directly tied and subordinated particularly industrial capitalist economy. The ecological problems degenerated and became unchangeable especially during this period due to the introduction of technologies such as the construction of dams unchangeable. Hence, the ecological impact of British colonial rule in India varied not only spatially but also temporally.

Almost all the studies stressing with the causes of deforestation and its impact in colonial India, few have touched upon the adverse impact of railways on forests⁸. Studies by Tucker and others examine the impact of railways on forests as part of the wider phenomenon of deforestation under colonial rule, but they do not offer a detailed provincial analysis of the relation between deforestation and the railway in colonial India. Neena Ambre Rao also discussed the colonial forest policy and its impact on colonial Maharashtra. The study indicates the increasing demand of the Teak sleepers for the foundation of railway in Maharashtra, but the study is very superficial to examine the impact of the railway

on the forest⁹. Recent studies have stressed the need for an examination of micro-histories of the environment so that significant differences and similarities at the local, regional and national level can be exposed. So, there is a need to bring regionally specific patterns of environmental and political study to analyze the role of a colonial empire.

Pallavi V. Das investigates the process and patterns of environmental degradation at a regional level by taking the case of deforestation in colonial Punjab by studying its suggestion at the level of an empire. First, the paper analyses the reasons for large-scale railway expansion in the Punjab by discussing spatial and temporal expansion. Secondly, the impact of the railway firewood demand on the Punjab's forests between 1860 and 1884 is examined, specifically, the conditions that facilitated the increased dependence of the railways on firewood. Next follows an examination of the temporally varying nature of deforestation, given that railway firewood demand was determined by railway line openings. This section also includes a discussion on the nature of the colonial state response to the deforestation crisis and its role in maintaining the fuel supply to the railways¹⁰.

3.8.1. Railways in North Bengal and Early Forest Policy:

In India, one of the main causes of deforestation was the ceaseless demand of the continually expanding railways for wooden sleepers or ties and firewood as fuel for Railway. Similarly, the rapid development of railways in the northern districts of the Bengal basically took place at the cost of huge deforestation for the incessant supply of railway sleepers. Obviously, the huge densely natural forest was cleared for the spread of the railway line which also ignored the stipulation of ecologic balance. If we see the foundation area of BDR, CSR and DHR, we may easily understand did how the colonial authority ignored ecological stance. The Bengal Dooars Railway passed across the three important wildlife sanctuaries like Buxa, Garumara and Mahanada, DHR as well as passed through the Mahananda wildlife sanctuary. Therefore, the colonial aim was to connect the tea gardens and the forest regions for their commercial interest at the same time for the military interest also. Soon after the annexation of Duars in 1864, the Conservator of forest suggested that the forest of Duars were of little use to the local community and should be made available to the other parts of Bengal for commercial utilization¹¹. A military cantonment was established in 1864, at the time of Bhutan war, within the Buxa Wild Life Sanctuary¹². The cantonment as well was connected with the extension of CBSR and Old Eastern Bengal Railway Section on 1st February 1901, which highly responsible for ecological imbalance. At present, the old BDR line is a part of North Front Railway and even highly responsible for the frequent killing of huge numbers of elephants yearly. Deep analysis of the forest policy is signifying that, to the colonial authority, the economy and enemy were more important than the ecology.

The foundation of NBSR which started in 1874, in response to the demand for transporting tea and timber also, that provided the forest department with the much-needed market for forest wood. The forest department hoped that the timbers of Duars would be able to achieve the vast timber market of Oudh, Nepal and Eastern Bengal that accelerate the commercial profit¹³. This, however, was not right what the forest department had hoped to find. According to the administrative report of the colonial Bengal (1871-72), the timber of Northern Bengal failed to achieve expected market, because of uneasy access and high cost¹⁴. If we study the export -import report of the wooden sleeper by the railway and the river between the districts of Northern Bengal and Assam, which clearly indicates that the timber of Duars had no as such a demand for external market or outside the Northern Bengal. In 1891 to 1900, the years are relevant, because the construction of railway was quickly going on in North Bengal and the construction of the Bengal, Duars Railway line was one of them.

Table No. 3.8.1

Import and Export of the Wooden Sleepers for the Construction of Railway 1891-1900

(Quantity in Mounds: 82.2/7 lbs.)

Year	Quarter	By the Railway between N.B. & different blocks of Bengal		By the river between Assam & North Bengal		Year	Quarter	By the Railway between N.B. & different blocks of Bengal		By the river between Assam & North Bengal	
		Import	Export	Import	Export			Import	Export	Import	Export
		Quantity in Mounds		Quantity in Mounds				Quantity in Mounds		Quantity in Mounds	
1891	31st Mar.	412		0	0	1895	31st Mar.	0	0	0	0
	30th June	214	6013	295	0		30th June	0	0	0	0
	30th Sep.	30	0	285	0		30th Sep.	329	0	0	0
	31st Dec.	8460	0	0	0		31st Dec.	1950	0	0	0
	TOTAL	9116	6013	580	0		TOTAL	2279	0	0	0
1892	31st Mar.	13922	0	0	0	1896	31st Mar.	0	0	0	0
	30th June	7466	0	0	0		30th June	0	0	0	0

	30th Sep.	1200	0	0	0		30th Sep.	0	0	0	0
	31st Dec.	1175	0	0	0		31st Dec.	0	0	0	0
	TOTAL	23763	0	0	0		TOTAL	0	0	0	0
1893	31st Mar.	1854	0	0	0	1898	31st Mar.	70185	0	0	0
	30th June	570	104	0	0		30th June	NA	NA	0	0
	30th Sep.	21	0	0	0		30th Sep.	0	0	0	0
	31st Dec.	52	0				31st Dec.	180	0	0	0
	TOTAL	2497	104	0	0		TOTAL	70365	0	0	0
						1899	30th June	2074	0	0	0
1894	31st Mar.	70	0	0	0		30th Sep.	0	57	0	0
	30th June	0	0	0	0		31st Dec.	0	0	0	0
	30th Sep.	0	0	0	0						
	31st Dec.	0	0			1900	30th Sep.	0	0	0	0
	TOTAL	70	0	0	0						

Source: Return of the Rail and River-Borne Trade of Bengal, Statement No. II- Trade by Rail between the different Blocks of Bengal and the different Provinces of India, Statement No. III –Trade by Rail between the different blocks of Bengal, Statement B: The River-borne trade between Assam and several blocks of Bengal, for the years 1891,1892,1893,1894,1895,1896 and 1898, all four Quarter endings of the every mentioned year. Bengal Secretariat Press, Calcutta¹⁵.

It is clear according to Table No. 3.8.1 that the export by the railways and river are very irrelevant except in the year 1891, and clearly indicates that import of the railway sleepers by the railways from the other province of Bengal is notable. Huge numbers of the railway sleepers were imported from the different provinces of Bengal for the construction of railway between the years 1891 to 1900. Here it is significant for our further discussion

that the Table no. 3.8.1 only indicates the import and export by the river Brahmaputra. We don't have an available source of the other rivers of the Northern Bengal, including the river Ganges.

Since, several important railways traffics were passed through the rich forest tracts in Bengal province and other parts of India as well. After the opening of Bengal Nagpur Railway, the line was used to huge traffic of *Sal's* timber, and the demand was increasing rapidly in the construction of the railway line accordingly for the demand of a huge sleeper. The line placed the rich forest tracts, abundant in *Sal's* timber, lying contiguous to the line, within easy access to markets. Another important factor was transport competition between different railways, which helped to reduce the railway fare. Remoteness of the Northern Bengal was responsible to reduce the demand of Northern Bengal's timber for external markets. Report on the Administration of Bengal, 1872-73 also indicates the factors responsible for the poor external demand: "The whole quantity of timber out of the Bengal forests seems very small for so great a population. But it must be remembered that for ordinary native requirements, petty timbers only are wanted, and that teak and other timber for Calcutta come either from Burma or Australia, while *sal* logs and planks, for Dacca, Kosee and Gunduck boat builders, come from Nepal forests. The forest of Assam and Coochbehar are for the most part so difficult of access, that Burma teak can certainly undersell the wood of Upper Assam in the Dacca market, and can very nearly undersell *Sal* logs from the Kamroop or Duar's forests"¹⁶.

3.8.2. Changing Forest Policy and Construction of Railway:

Soon the authority changed their policy and recommended to use this resource for the construction of the nearest railway line of Northern Bengal like DHR, CBSR, BDR, and NBSR. According to their point of view, the demand for railway would be large enough to exhaust the forests but the price at which the timber had to be supplied would not provide enough profits to the department. The conservator, Dr. Svihlch was not same with the authority. He strongly opined that 'if the quantity asked [by the state railway] is supplied by the department, the forests will be exhausted and require rest for years. Moreover, whatever numbers of sleepers may be supplied to the North Bengal State Railway, will be at low rate and will necessarily reduce the income to be derived from selling the timber to private parties¹⁷'. If we follow the main provisions of the contracts and agreement for the construction of BDR between the Secretary of State and Messrs Octavius Steel and Company, Promoters, Bengal Dooars Railway Company, which conducted on 27th April 1891. The governments provided free of cost certain timber for sleepers for first construction. It was, however, provided that subject to the fulfillment of certain conditions on the request of the Company; the Government should take over the original line and extensions, and should work and maintain them through the agency of the Eastern Bengal Railway, at 40 percent of the gross receipts in each half year, paying the remaining 60

percent over to the company¹⁸. Therefore, no doubt that the Colonial forest authority was in favor of the border needs of colonial interest; and the forest in Duars, like those other parts of the country, was utilized to create and recreate the situations for their own exploitation. The forest authority also indicates that: "The North Bengal Railway will require large quantities of materials from Darjeeling and Jalpaiguri, and at present the demand is much greater than that can be satisfied from the Forest. A considerably increased outrun should be the object with which these forests should be managed¹⁹." Therefore, the mentality is clear: the construction of the railway was required at any cost, where the ecology and environment were insignificant. As Dr. Cleghorn furnished a later note, in his address to the nineteenth annual meeting of the Scottish Arboricultural Society, 'The introduction into India of railways, and the rapidly increased demand for timber for sleepers (ties) and fuel, at length forced the attention of the Government to the vital question of forest management²⁰'. No doubt, this note indicates the apprehension of colonial forest policy.

Table No: 3.8.2

Number of Sleepers supplied from the Buxa Forest Division, 1879-1882

Year	Number of Sleepers Supplied
1879	18449
1880	22683
1881	29865
1882	21602

Source: *The sources for the table are the following for the respective years:*

Proceedings of the Board Revenue (Bengal), Forest, P/1319, Nov. 1879, p.37; Progress Report of the Forest Administration, P/1642, 1880/81, p.36; Progress Report of the Forest Administration, P/1836, 1881/82, p.37; Progress Report of the Forest Administration, P/2025, 1882/83, p.60. Cited in Transformation on the Bengal Frontier, Jalpaiguri 1765-1948, by Subhajoti Ray, Routledge Curzon, London, 2002, pp.72-74

No.3.8.2 indicates that what extent the colonial policy applied for the rapid exhaustion of forest to meet the growing demand for railways sleepers. The above table indicates the massive export quantity of the railway sleepers, which supplied for the construction of the Northern Bengal State Railway, but later local sleepers also used for the construction of another railway line like the BDR and CSR²¹. Therefore, due to an unscientific forest policy of the authority, the forests of the Duars were rapidly opened. Table No.3.8.2 indicates only one of the two forest divisions of the Jalpaiguri district. In

1878, 2776 green trees and 1932 dry trees were cleared for making sleepers in the Buxa division to meet the demand of North Bengal State Railway²². The chopping of 2776 green trees indicates how the forest reservation policy was demoralized due to unending pressure of colonial interest. Yet again, in 1876-77 and 1877-78, 2776 green trees were cleared in the Buxa division to meet the demands of railway companies²³. At the same time, in 1876-77 when 5900 acres of forest were accidentally burnt in the Jalpaiguri Division, the department did not take any action to recover the burning forest²⁴.

Table No. 3.8.3

Timber, Unwrought Imported by the Rail and River in North Bengal Excluding the District Darjeeling and Coochbehar State for the Year's 1906-10

(Quantity in Mounds: 82.2/7 lbs.)

Year	Imported By the Rail			Imported By the River			Total Imported by the Rail and River	
	Quantity In Mounds	Percentage of Quantity From the Total By the Rail & River	Value in Rupee	Quantity In Mounds	Percentage Of Quantity From the Total By the Rail & River	Value in Rupee	Quantity In Mounds	Value in Rupee
1906-7	38783	96.72053	134003.7	1315	3.279465	4543.61	40098	138547.3
1907-8	99350	95.68894	360155.4	4476	4.311059	16226.02	103826	376381.4
1908-9	66497	97.18232	247317.1	1928	2.817684	7170.661	68425	254487.8
1909-10	49197	97.12171	204686.5	1458	2.878294	6066.08	50655	210752.6
1910-11	41932	95.49751	170595.7	1977	4.502494	8043.206	43909	178638.9

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table I* : Showing Quantity (in mounds) and value (in rupees) of each article imported by rail and river into each block of Eastern Bengal and Assam from other provinces, during the above mentioned years. **Table III** : Showing Quantity (in mounds) and value (in rupees) of each article imported by river only into each block of Eastern Bengal and Assam from other provinces, in the year 1906-7, 1907-8, 1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong²⁵.

J. F. Gruning mentions: "the Buxa division is capable of still further development, but its working is hampered by the difficulty experienced in getting the timber to the markets of Eastern Bengal and Calcutta"²⁶. Gruning view also approved that how the railways were used to accelerate timber trade by hampering the interest of ecology. BDR as well passed through the Tista Forest Division which situated on the mountain slopes to the east of the Tista River. According to Mr. Tinne, Deputy Conservator of Forest, Tista Division 128630 cubic foot timber was sold at the rate of Rs.34980 within last ten years, where the revenue from r sleeper was also included²⁷. The voice of O'Malley also indicates the brutal forest policy of the colonial authority. According to him, 'when the forest department took charge (in 1864) of these forests (forest divisions of the Darjeeling district), they had to allow advanced felling in the principal *sal* areas in order to meet the demand of the railway for sleepers'²⁸. 'Almost the whole of the yearly yield of *sal* timber is extracted in the form of meter-gauge railway sleepers, for which the Eastern Bengal State Railway provides a practically unlimited demand, the remainder being cut into sleepers for the Darjeeling Himalayan Railway, or into scantlings, which are carted down to Siliguri and disposed of their'²⁹.

3.8.3. Changing Scenario at the Beginning 20th Century:

However, the condition was no longer same. With the development of railway communication, the remoteness of the region gradually diluted and the wood became easy to access for marketing. The development of communication reduced the transport cost and helped to compete the timber of North Bengal with the Burma, Assam, and Australian timber. The discussion below indicates the gradual development of the demand of the timber of North Bengal.

Table No. 3.8.4

Comparative Study of the Import and Export of the Timber (unwrought) by the Rail and River in North Bengal Excluding the District Darjeeling and Coochbehar State for the Year's 1906-10

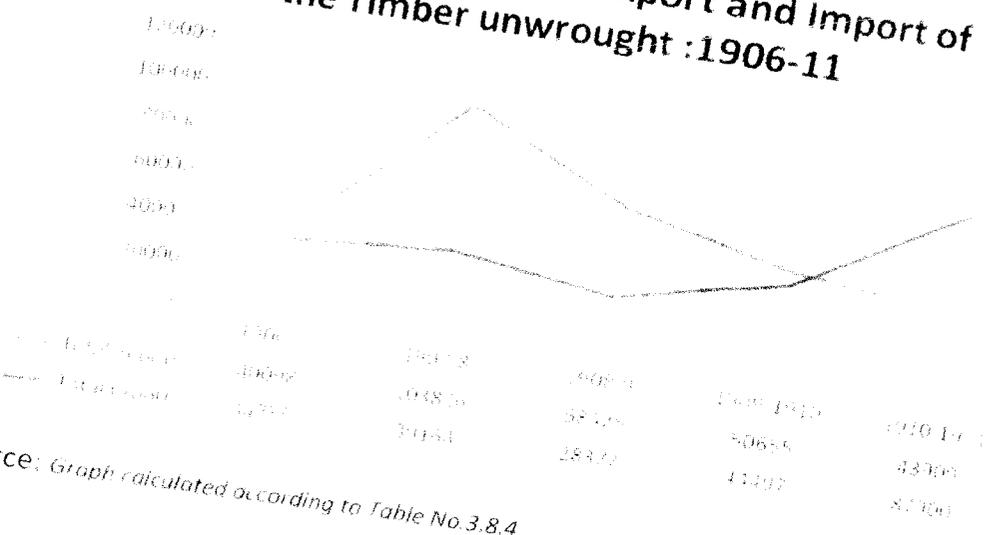
(Quantity in Mounds: 82.2/7 lbs.)

	Total Import	Total Export	Imported Value	Exported Value
1906-7	40098	34755	138547.3	52132.2
1907-8	103826	39164	376381.4	58744.83
1908-9	68425	28372	254487.8	42743.88
1909-10	50655	44497	210752.6	66744.55
1910-11	43909	87900	178638.9	131848.5

Source: Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table II : Showing Quantity (in mounds) and value (in rupees) of each article exported by rail and river from each internal block of Eastern Bengal and Assam to other provinces, Table IV : Showing Quantity (in mounds) and value (in rupees) of each article exported by, river only, from each internal block of Eastern Bengal and Assam From other provinces, in the year 1906-7, 1907-8, 1908-9, 1909-10 and 1910-11. Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong. (For Details see reference No.24.)

Table No. 3.8.5

Comparative Study of the Export and Import of the Timber unwrought : 1906-11



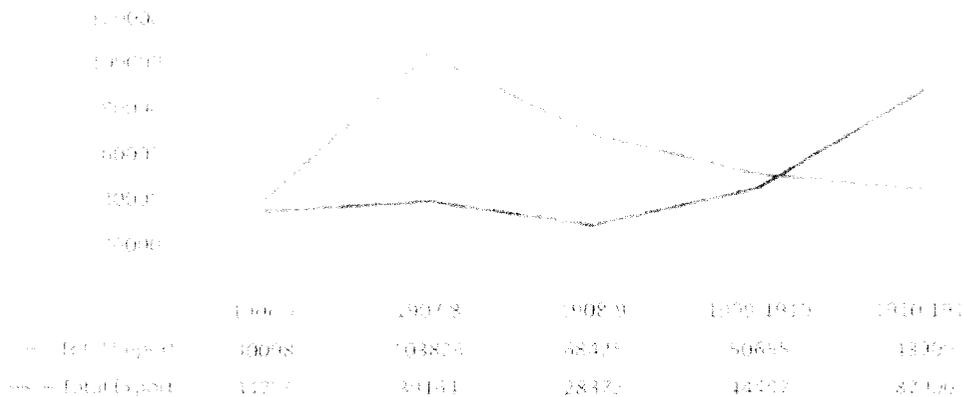
Source: Graph calculated according to Table No.3.8.4

According to the Hunter's account (in 1878), in the Jalpaiguri district, the chief road traffic was *sal* timber, which taken to the banks of the nearest river, and then down the streams to the Brahmaputra, on their way to Sirajganj, Dacca and other places. This is, however, clear according to Table No. 3.8.1, even up to the end of the 19th century there was a little demand of Duars' timber for the external market due to uneasy and high cost. In the years between 1891 to 1900, 110744 mound sleeper imported from the external market to reduce the huge demand for the foundation of the railways in Assam. At the same time the export quantity was negligible (See the Table.3.8.1) Table 3.8.1 indicates the import-export trade of the timber by the river Brahmaputra but which gradually changed after the first decade of the 20th Century. Export

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table II : Showing Quantity (in mounds) and value (in rupees) of each article exported by rail and river from each internal block of Eastern Bengal and Assam to other provinces, Table IV : Showing Quantity (in mounds) and value (in rupees) of each article exported by, river only, from each internal block of Eastern Bengal and Assam From other provinces, in the year 1906-7,1907-8,1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong, (For Details see reference No 24.)*

Table No. 3.8.5

Comarative Study of the Export and Import of the Timber unwrought :1906-11



Source: Graph calculated according to Table No.3.8.4

According to the Hunter's account (in 1878), in the Jalpaiguri district, the chief downward traffic was *sal* timber, which taken to the banks of the nearest river, and then floated down the streams to the Brahmaputra, on their way to Sirajganj, Dacca and other places³⁰. This is, however, clear according to Table No. 3.8.1, even up to the end of the 19th century; there was a little demand of Duars' timber for the external market due to uneasy access and high cost. In the years between 1891 to 1900, 110744 mound sleeper imported from the external market to reduce the huge demand for the foundation of the railways in North Bengal at the same time the export quantity was negligible (See the Table.3.8.1).Table No. 3.8.1 only indicates the import- export trade of the timber by the river Brahmaputra but the condition gradually changed after the first decade of the 20th Century. Export

remarkably increased after 1909-10 due to easy access and low transport cost for the development of railways.

Table No. 3.8.6

Comparative Study of the Export of the Timber (Unwrought) by the Railway and River in North Bengal for the Year's Between 1906-10, Excluding Darjeeling and Coochbehar State.

(Quantity in Mounds: 82.2/7 lbs.)

Year	Exported by the Rail			Exported By the River			Total Exported by Rail & River	
	Quantity in Mounds	Percentage from the Total Exported by the Rail and River	Value in Rupee	Quantity in Mounds	Percentage from the Total Exported by the Rail and River	Value in Rupee	Quantity in Mounds	Value in Rupee
1906-7	34091	98.08948	51136.21	664	1.910516	995.9944	34755	52132.2
1907-8	38294	97.77857	57439.85	870	2.221428	1304.974	39164	58744.83
1908-9	27711	97.67024	41748.05	661	2.329762	995.8305	28372	42743.88
1909-10	44151	99.22242	66225.55	346	0.777581	518.9926	44497	66744.55
1910-11	87276	99.2901	130912.5	624	0.709898	935.9895	87900	131848.5

Source: Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table II : Showing Quantity (in mounds) and value (in rupees) of each article exported by rail and river from each internal block of Eastern Bengal and Assam to other provinces, Table IV : Showing Quantity (in mounds) and value (in rupees) of each article exported by, river only, from each internal block of Eastern Bengal and Assam From other provinces, in the year 1906-7,1907-8,1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong, (For Details see reference No.24).

remarkably increased after 1909-10 due to easy access and low transport cost for the development of railways.

Table No. 3.8.6

Comparative Study of the Export of the Timber (Unwrought) by the Railway and River in North Bengal for the Year's Between 1906-10, Excluding Darjeeling and Coochbehar State

(Quantity in Mounds: 82.2/7 lbs.)

Year	Exported by the Rail			Exported By the River			Total Exported by Rail & River	
	Quantity in Mounds	Percentage from the Total Exported by the Rail and River	Value in Rupee	Quantity in Mounds	Percentage from the Total Exported by the Rail and River	Value in Rupee	Quantity in Mounds	Value in Rupee
1906-7	34091	98.08948	51136.21	664	1.910516	995.9944	34755	52132.20
1907-8	38294	97.77857	57439.85	870	2.221428	1304.974	39164	58744.82
1908-9	27711	97.67024	41748.05	661	2.329762	995.8305	28372	42743.88
1909-10	44151	99.22242	66225.55	346	0.777581	518.9926	44497	66744.55
1910-11	87276	99.2901	130912.5	624	0.709898	935.9895	87900	131848.5

Source: *Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, Table II : Showing Quantity (in mounds) and value (in rupees) of each article exported by rail and river from each internal block of Eastern Bengal and Assam to other provinces, Table IV : Showing Quantity (in mounds) and value (in rupees) of each article exported by, river only, from each internal block of Eastern Bengal and Assam From other provinces, in the year 1906-7,1907-8,1908-9, 1909-10 and 1910-11, Printed at the Eastern Bengal and Assam Secretariat Printing Office, Shillong, (For Details see reference No.24).*

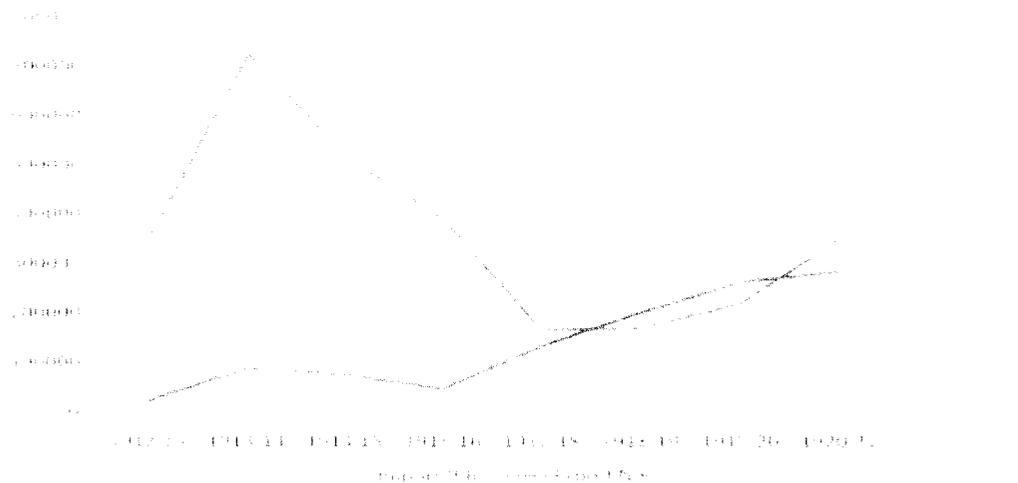
Table.3.8.7				
Import and Export of the Timber Unwrought by the Railway and River				
(1912-21)in the Northern Bengal				
(Quantity in Mounds: 82.2/7 lbs.)				
Year	Import Quantity in Mounds	Export Quantity in Mounds	Import Value in Rupee	Export Value in Rupee
1912-13	352593	24179	1377607.001	126715.4492
1913-14	726795	89630	2598727.829	440037.9804
1914-15	516766	76848	2106047.204	425063.6918
1915-16	392924	47734	1702985.533	328473.0509
1917-18	166473	133636	936772.3963	1093368.643
1918-19	167829	202274	1288724.836	2312480.218
1919-20	219399	262403	1559437.297	2815300.369
1920-21	348925	284707	2517566.128	2922596.404
Average	361463	140176.4		
Total			14087868.22	10464035.81

Source: *Report on the Trade Carried by Rail and River in Bengal Table No. I: Quantity (in mounds) and Value (in rupees) of each Article Imported by Rail and River into each Internal Block in Bengal from each External block and from Calcutta, and into Calcutta from Bengal, Table No. II: Quantity (in mounds) and Value (in rupees) of each Article Exported by Rail and River from each Internal Block in Bengal to each External block and to Calcutta, and from Calcutta to Bengal. Table No. III: Quantity (in mounds) and Value (in rupees) of each Article Imported by River into each Internal Block in Bengal from Assam and from Calcutta ; and from the United Province of Agra and Oudh, from Bihar and Orissa and from Bengal into Calcutta, Table No. IV: Quantity (in mounds) and Value (in rupees) of each Article Exported by River from each Internal Block in Bengal to Assam and to Calcutta ; and to the United Province of Agra and Oudh, to Bihar and Orissa and to Bengal from Calcutta in the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta³¹.*

The above study (Table No. 3.8.7) indicates a significant trend and designates that the average of the import is more than double from the export between the years 1912 to 1921. It is surprising that the demand of the cheap timber in the Northern Bengal was indispensable even up to 1921, where the huge dense forest was available. The import remarkably decreased between the years 1912 to 1919, at the same time export developed consistently. The export became higher from the import in the years 1918-19 and 1919-20, which indicates the further probability and prosperity of the timber of Northern Bengal. Average export of the timber for the years 1913 to 1916 was 59597.75 mounds, which remarkably increased between the years 1918 to 1921 and the average is 220755 mounds, that 370% more from the earlier four years. Therefore, it will clear if we follow the graph below (Table no 3.8.8) and the graph as well indicates constant growth

Table No. 3.8.8

Export and Import of the Wood Unwrought Excluding Railway Sleeper 1912-21



Source: Graph prepared according to Table No.3.8.7

Before 20th Century, the timber of North Bengal failed to achieve export market due to competition with the timber of Burma, Nepal and Australia³². We have already mentioned, transport competition between different railways helped to reduce the railway fare, simultaneously; remoteness of the northern Bengal due to uneasy access for the conventional communication system, was also responsible for the extremely little demand

for the markets. After the foundation of the railways in the *Doars* and *tarai* region, the forest of North Bengal completely exposed for the national market, and it was comparatively easy to access for the external demand.

3.8.4. Comparative Study of the Import Trade by Rail and River:

We have studied the role of railways to dilute the uneasy access and remoteness of the region. We calculated the percentage of the railway and river to import the timber of North Bengal.

Table No. 3.8.9

Comparative Study of the Timber , Imported by Rail and River in the Northern Bengal

(Quantity in Mounds: 82.2/7 lbs.)

Year	Imported by Rail quantity in Mounds	Percentage of the Railway from the total Imported by Rail& River	Imported by River quantity in Mounds	Percentage of the River from the total Imported by Rail & River	imported value in Rupee by the Railway	Imported value in Rupee by the River
1912-13	83293	23.62299	269300	76.37701	290513.8	1146438
1913-14	394036	54.21556	332759	45.78444	1302117	1263631
1914-15	432942	83.77912	83824	16.22088	1648850	370178
1915-16	203044	51.67513	189880	48.32487	731650.5	907652.3
1917-18	80210	48.18199	86263	51.81801	322098.9	533981
1918-19	54602	32.53431	113227	67.46569	286606.7	1001018
1919-20	63874	29.11317	155525	70.88683	316716.5	1287333
1920-21	113531	32.53736	235394	67.46264	616847.4	1891578
TOTAL	1425532		1466172		5515401	8401810
Average of the Percentage by Rail and River		44.45745		55.54255		

Source: Report on the Trade Carried by Rail and River in Bengal Table No. I: Quantity (in mounds) and Value (in rupees) of each Article Imported by Rail and River into each Internal Block in Bengal from each External block and from Calcutta, and into Calcutta from Bengal, Table No. III: Quantity (in mounds) and Value (in rupees) of each Article Imported by River into each Internal Block in Bengal from Assam and from Calcutta ; and from the United Province of Agra and Oudh, from Bihar and Orissa and from Bengal into Calcutta in the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Calcutta. (For Detail See Reference No.30).

Table No. 3.8.9, clearly indicates both the railway and river took the fundamental role to import the timber in North Bengal, and the most remarkable feature is here the role of the river transport system was very significant and dominant up to the year 1921, when the railway dominantly extended all over the North Bengal. The river Brahmaputra and Nadia rivers system, consequently, took necessary function to import the timber from Assam and Calcutta. Both the rivers are perennial throughout the year for heavy loaded boat, and the river Brahmaputra is more convenient for the downstream import from the Assam forest with chief transport cost. It was chief because the wooden logs were floated in the river Brahmaputra, and by using the current of the river it was very easy way to sending bulk of logs to the downward direction. Hence, the report on the trade carried by the River in Bengal indicates that the import from the Assam was more significant than the Calcutta. Table No. 3.8.9 also indicates that the mean of the river transport (55.54%) according to quantity between the mentioned years (1912-21) is more than the railways (44.45%). The gross imported by the river and value of the imported quantity are also more than the railway. Therefore, the conventional system was more practical and significant even up to 1921.

3.8.5. Study on Jalpaiguri and Buxa Forest Division 1898-1908:

If we study the export condition at the beginning of the 20th century, the condition was completely monopolistic by the railways. The northward extension of the CSR, which linked with Old Eastern Bengal Railway accelerate the process of timber export from 'Duars' region in Jalpaiguri district. Before the railway link, most of the timber from the Buxa forest in Jalpaiguri district would cart to Alipurduar and float thence down the river *Kaljani* to river Brahmaputra. There was considerable difficulty in dealing with the produce extracted from the forests owing to the inability of the Coochbehar State Railway to carry timber; the line was 2'6' narrow gauge. Therefore, the carrying capacity and the rolling stock were inadequate. The timber again reloaded from the CSR to EBSR at the Gitaldaha Junction where the CSR joined with the EBSR. In 1910, after the conversion of the CSR into a meter gauge, it was more convenient to export the timber for the market of Eastern Dacca and Rangpur³³.

Table No. 3.8.10

Financial Result of the Jalpaiguri and Buxa Forest Division 1898-1908

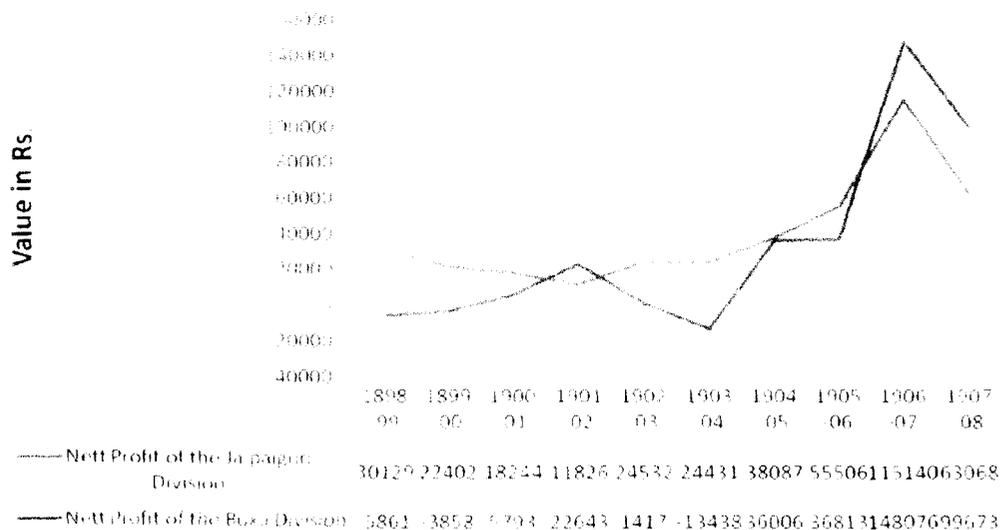
(Quantity in Mounds: 82.2/7 lbs.)

	Jalpaiguri Division			Buxa Division		
	Ravenue	Expenditure	Nett Profit	Ravenue	Expenditure	Nett Profit
1898-99	54568	24439	30129	17452	23313	-5861
1899-00	56780	34378	22402	28825	32683	3858
1900-01	55345	37101	18244	43228	37435	5793
1901-02	56774	44948	11826	62675	40032	22643
1902-03	68621	44089	24532	57334	55917	1417
1903-04	59199	34768	24431	63256	76694	-13438
1904-05	88521	50434	38087	120789	84783	36006
1905-06	99403	43897	55506	132484	95671	36813
1906-07	133929	18789	115140	245937	97861	148076
1907-08	104730	41662	63068	220893	121220	99673

Source: *Gunning, H. Eastern Bengal and Assam District Gazetteers, Jalpaiguri, Allahabad the Pioneer Press, 1911 p.93*

Table No. 3.8.11

Gradual Growth of the Profit from the Jalpaiguri & Buxa Division 1898-1907



Source: According to Table No. 3.8.10

3.8.6. Comparative Role of the Railway and River in Timber Trade up to 1921:

Railways took a dominant role after the first decade of the 20th century which mentioned in the export statistics (Table No. 3.8.6) and how the railway took an essential role to dilute the problem of uneasy access and remoteness of the region, which helped to expose the forest of the Northern Bengal for the external market. The railways carried 99% of the total exported timber by the both, rail and river from the Northern Bengal to external market. Therefore, the foundation of the railways in 1878 and thereafter momentous extension up to 1921 accelerated the process of the deforestation by exposing the forest property of the North Bengal for the external demand. We already discussed (Table No.3.8.3) the import remarkably decreased between the years 1912-19, at the same time export developed consistently where the role of the railways was dominant. Table no.3.8.8 graphically indicates that how the railway did played leading role to solve the problem of the remoteness of North Bengal.

Table No. 3.8.12

Comparative Study of the Timber, Exported by Rail and River in North Bengal

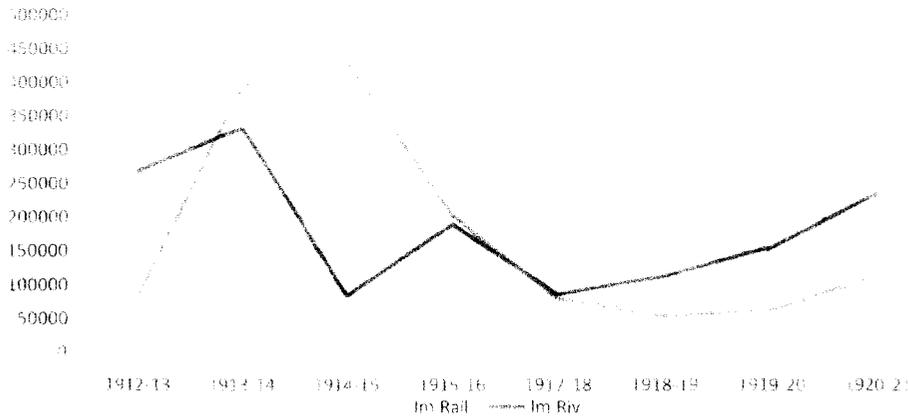
(Quantity in Mounds: 82.2/7 lbs.)

Year	Exported by Rail quantity in Mounds	Percentage of the Railway from the total Exported by Rail & River	Exported by River quantity in Mounds	Percentage of the River from the total Exported by Rail & River	Exported value in Rupee by the Railway	Exported value in Rupee by the River
1912-13	24113	99.72704	66	0.272964	127160.4	344.2523
1913-14	88755	99.02376	875	0.976236	433057.1	4315.495
1914-15	76443	99.47299	405	0.527014	419250.3	2257.414
1915-16	46922	98.29891	812	1.701094	323568.2	5581.883
1917-18	132963	99.49639	673	0.503607	1098498	5473.248
1918-19	201719	99.72562	555	0.27438	2310468	6335.761
1919-20	262175	99.91311	228	0.086889	2805285	2450.301
1920-21	282434	99.20164	2273	0.798365	2893237	23358.67
TOTAL	139440.5		735.875		10410525	50117.03
Average of the Percentage by Rail and River		99.35743		0.642569		

Source: Report on the Trade Carried by Rail and River in Bengal Table No. I: Quantity (in mounds) and Value (in rupees) of each Article Imported by Rail and River into each Internal Block in Bengal from each External block and from Calcutta, and into Calcutta from Bengal. **Table No. II:** Quantity (in mounds) and Value (in rupees) of each Article Exported by Rail and River from each Internal Block in Bengal to each External block and to Calcutta, and from Calcutta to Bengal. **Table No. III:** Quantity (in mounds) and Value (in rupees) of each Article Imported by River into each Internal Block in Bengal from Assam and from Calcutta, and from the United Province of Agra and Oudh, from Bihar and Orissa and from Bengal into Calcutta. **Table No. IV:** Quantity (in mounds) and Value (in rupees) of each Article Exported by River from each Internal Block in Bengal to Assam and to Calcutta; and to the United Province of Agra and Oudh, to Bihar and Orissa and to Bengal from Calcutta in the Official years 1912-13,1913-14,1914-15,1915-16,1917-18,1918-19,1919-20,1920-21, Published by the Government of Bengal, Bengal Secretariat Book Depot (BSBD),Calcutta, (For Detail See Reference No.30).

Table No 3.8.13

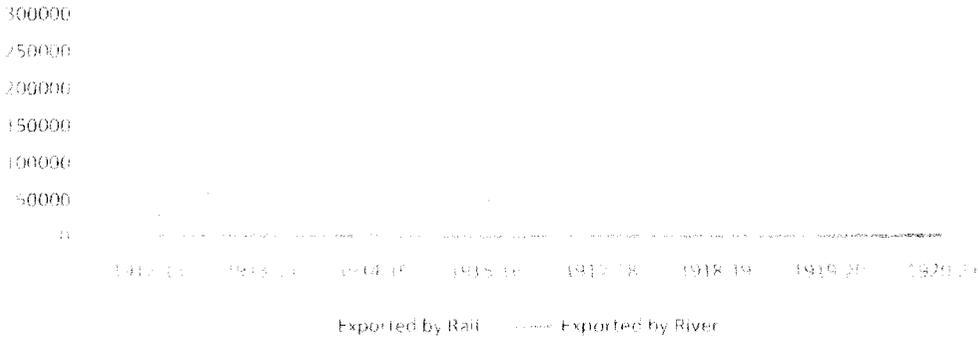
Timber ,Imported by Rail and River in North Bengal:1912-1921



Source: Graph Prepared According to Table No. 3.8.9

Table No. 3.8.14

Timber ,Exported by Rail and River in North Bengal



Source: Graph Prepared According to Table No. 3.8.12

Our analyses of the hypotheses trace to conclude that at the initial stage, the Colonial authority hoped that the market of the timber would be more profitable like tea, if they exposed the remote forest region of North Bengal by opening of the railway. At the early stage, the dream of the Colonial authority failed to achieve the success due to competition with the Burma, Australia and Assam. After that they changed their policy, between the years 1874 to 1900, the authority aggressively used the forest property of the North Bengal, for the construction of the railway line in the Northern region Bengal and thus the huge amounts of wooden sleepers were used usually free of cost. Our study and analyses also clarify the brutal forest policy of the colonial authority, and we may as well conclude that the construction of the railway in the North Bengal it occurred at the cost of deforestation, which continued for the further period. At the beginning of the 20th century, the northward extension of the CSR, which linked with Old Eastern Bengal Railway accelerate the process of timber export from Duars region in Jalpaiguri district. The remoteness of the forest divisions was gradually diluted by the development of the railways in the northern districts of Bengal. The export statistics of the first quarter of the 20th century indicate that the railway took major role to expose the forest property of the North Bengal. Therefore, the initial aim of the Colonial authority behind the foundation of the railway was not wrong, and the timber gradually became one of the chief export items from North Bengal like as tea.

¹ . Some of the studies in this genre include E. P. Stebbing, *The Forests of India*, London, 1922; R. Grove, *Green Imperialism: Colonial Expansion, Tropical Edens and the Origins of Environmentalism, 1600–1860*, Cambridge University Press, New York, 1995.

² .ibid

³ . Studies by this group include R. Guha and M. Gadgil, 'State Forestry and Social Conflict in British India', *Past and Present*, vol. CXXIII, 1989, pp. 141–177; D. Arnold, *The Problem of Nature: Environment, Culture and European Expansion*, Wiley-Blackwell, 1996.

⁴ . Guha and Gadgil, op. cit

⁵ S. Guha, *Environment and Ethnicity in India from the Twelfth to the Twentieth Centuries*, Cambridge University Press, Cambridge, 1999; S. Guha, 'Claims on the Commons: Political Power and Natural Resources in Pre-Colonial India', *The Indian Economic and Social History Review*, vol. 39(2–3) 2002, pp. 181–196; M. Rangarajan, *Fencing the Forest: Conservation and Ecological change in India's Central Provinces, 1860–1914*, Oxford University Press, Delhi, 1996.

⁶ . J. Moore, 'Environmental Crises and the Metabolic Rift in World-Historical Perspective', *Organization and Environment*, vol.13, 2, 2000, pp. 127.

⁷ . R. Guha, 'Forestry in British and Post British India: An Historical Analysis', *Economic and Political Weekly*, vol. XVII, 1983, pp. 1882–1896.

⁸ R. Guha, op. cit.; R. P. Tucker, 'Forests of the Western Himalaya and the British Colonial System (1815–1914)', in *Indian Forestry: A Perspective*, A. Rawat (ed.), Indus Publishing Company, New Delhi, 1993; M. Gadgil, and R. Guha. *This Fissured Land: An Ecological History of India*, University of California Press, Berkeley, 1993.

⁹ . Neena Ambre Rao: *Forest Ecology In India: Colonial Maharashtra 1850-1950* Cambridge University Press India Pvt. Ltd. 2007

¹⁰ . PALLAVI V. DAS (2012). Railway fuel and its impact on the forests in colonial India: The case of the Punjab, 1860–1884. *Modern Asian Studies*, null, pp 1-27 ,doi:10.1017/S0026749X12000637

¹¹ .The government open forests in this district have to perform no, or very limited functions with regard to the regulation of moisture, and their object is exclusively to provide forest material. The Western Duars themselves are very thinly populated and the requirements of the population are very small indeed. On the other hand timber is much in demand in the districts south of the Duars , specially in Coochbehar, Rangpore and the western districts of Dacca Presidency.

Cited in .Subhajoti Ray: Transformation on the Bengal Frontier, Jalpaiguri 1865-1948,Routledge Curzon, New York, 2002.

¹² . District census Hand book 1951.p.ciii

¹³ .Progress Report of the Forest Administration in the Lower Province of Bengal P/889.1876&1877p.26

¹⁴ . 'unsuccessful efforts were made to bring the Government timber in the Cooch Behar division into the market at a reasonable cost'

Report On The Administration Of Bengal (1871-72),p 123

¹⁵ .

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st March 1891,	Statement No. II, pp. XXX - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th June 1891,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th Sept 1891,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st Dec.1891,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st March 1892,	Statement No. II, pp. XXX - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th June 1892,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	30 th Sept.1892,	Statement No. II, pp. xxx - lv. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	31 st Dec.,1892	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade		Statement No. II, pp. xxxi - lv.

of Bengal During the Quarter Ending the	March ,1893,	Statement No. III, pp. lvi - lxxvii. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June, 1893,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1893,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxxvi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec.1893,	Statement No. II, pp. II - liii. Statement No. III, pp. III - lxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Mar,1894,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1894,	Statement No. II, pp. xxxi - lvii. Statement No. III, pp. lviii - lxxix. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1894,	Statement No. II, pp. xxxi - lv. Statement No. III, pp. lvi - lxxvii. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1894,	Statement No. II, pp. xxx - liii. Statement No. III, pp. liv - lxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1895,	Statement No. II, pp. xxxv - lxi. Statement No. III, pp. lxii - lxxiii. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1895,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1895,	Statement No. II, pp. xxxv - lix. Statement No. III, pp. lx - lxxi. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1895,	Statement No. II, pp. xxxi - lvi. Statement No. III, pp. lviii - lxxix. Statement No. B, pp. vii - xvi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March 1896,	Statement No. II, pp. xl - lxxii. Statement No. III, pp. lxiv - lxxv. Statement No. B, pp. vii - xvi.

Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1896,	Statement No. II, pp. xxxi - lxxv. Statement No. III, pp. lxxvii - lxxxix. Statement No. B, pp. ix - xviii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept.1896,	Statement No. II, pp. xxx - lxi. Statement No. III, pp. lxxiv - lxxxv. Statement No. B, pp. ix - xviii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1896,	Statement No. II, pp. xxxv - lxxix. Statement No. III, pp. lxxxii - lxxxiv. Statement No. B, pp. ix - xix.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	March, 1898,	Statement No. II, pp. xlii - lxxvii. Statement No. III, pp. lxxx - xcii. Statement No. B, pp. ciii - cxiii.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	June,1898,	Statement No. II, pp. xliiv - lxxxix. Statement No. III, pp. lxxx - xciv. Statement No. B, pp. civ - cxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept 1898,	Statement No. II, pp. xliiv - lxxxix. Statement No. III, pp. lxxx - xciv. Statement No. B, pp. civ - cxxv.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1898,	Statement No. II, pp. xlvi - lxxxiii. Statement No. III, pp. lxxx - xcvi. Statement No. B, pp. cx - cxxxi.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept. 1899,	Statement No. II, pp. xliiv - lxxxix. Statement No. III, pp. lxxx - xcvi. Statement No. B, pp. cviii - cxxix.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Dec,1899,	Statement No. II, pp. xliii - lxxxix. Statement No. III, pp. lxxx - xcvi. Statement No. B, pp. cviii - cxxix.
Return of the Rail and River-Borne Trade of Bengal During the Quarter Ending the	Sept. 1900,	Statement No. II, pp. xlvii - xciii. Statement No. III, pp. xciv - cix. Statement No. B, pp. cxx - cxliii.

¹⁶ . Report on the Administration of Bengal , 1872-73, With a Statistical Summary ,Bengal Secretariats Press, Calcutta, 1872,p.218

¹⁷ . Proceedings of the Board Revenue(Bengal),Forest P/243, Aug.1874pp..9-10, Cited in Transformation on the Bengal Frontier, Jalpaiguri 1765-1948, by Subhajoti Ray , Routledge Curzon, Landon, 2002,pp.72-74

¹⁸ Supplement to the History of Indian Railway,(History of Defunct Railways), Government of India, Ministry of Railways,Railway Board,p.145.

¹⁹ .Proceedings of the Board Revenue(Bengal),Forest P/243,July1875.p.4, Cited in Transformation on the Bengal Frontier, Jalpaiguri 1765-1948, by Subhajoti Ray , Routledge Curzon, Landon, 2002,pp.72-74 .

²⁰ . H. F. Cleghorn, *Address Delivered at the Twentieth Annual Meeting of the Scottish Arboricultural Society*, Neill & Company, Edinburgh, 1873, p. 5, Cited in Transformation on the Bengal Frontier, Jalpaiguri 1765-1948, by Subhajoti Ray , Routledge Curzon, Landon, 2002,pp.72-74.

²¹ . Supplement to the History of Indian Railway,(History of Defunct Railways), Government of India, Ministry of Railways ,Railway Board,p.145.

²² . Progress Report of the Forest Administration ,P/889,1877/78, p.33, Cited in Transformation on the Bengal Frontier, Jalpaiguri 1765-1948, by Subhajoti Ray , Routledge Curzon, Landon, 2002,pp.72-74 Cited in Transformation on the Bengal Frontier, Jalpaiguri 1765-1948, by Subhajoti Ray , Routledge Curzon, Landon, 2002,pp.72-74 .

²³ .ibid,pp.32-33.

²⁴ . ibid,pp.32-33.

²⁵ .

Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam , EBASP, Shilong,	1906-07,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III,, pp. xxxv - liii. Statement No. IV, pp. liv - lxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1907-08,	Statement No. I, pp. i - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - liii. Statement No. IV, pp. liv - lxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1908-09,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - liii. Statement No. IV, pp. liv - lxvii.
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1909-10,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III pp. xxxv - li.

		Statement No. IV, pp. lii - lxiii
Report on the Trade Carried by Rail and River in the Province of Eastern Bengal and Assam, EBASP, Shilong,	1910-11,	Statement No. I, pp. ii - xxi. Statement No. II, pp. xxii - xxxv. Statement No. III, pp. xxxv - li. Statement No. IV, pp. lii - lxv.
²⁶ . J. F. Gruning. Op cit. p.93		
²⁷ .L.S.S.O.Malley ,Darjeeling District Gazetteers.p.89		
²⁸ . L.S.S.O.Malley,Op cit.p.93		
²⁹ . L.S.S.O.Malley,Op cit.p.96		
³⁰ .Statistical Account of Bengal, Vol-X, Op.cit.p237		
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1912-13,	Statement No I, pp. 1 - 18. Statement No. II, pp. 19 - 38. Statement No. III, pp. 39 - 57. Statement No. IV, pp. 58 - 74.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1913-14,	Statement No. I, pp. 5 - 22. Statement No. II, pp. 23 - 42. Statement No. III, pp. 43 - 61. Statement No. IV, pp. 62 - 78.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1914-15,	Statement No. I, pp. 7 - 24. Statement No. II, pp. 25 - 44. Statement No. III, pp. 45 - 63. Statement No. IV, pp. 64 - 80.
Report on the Trade Carried by Rail and River in Bengal, BSBD, Calcutta,	1915-16,	Statement No I, pp. 7 - 29. Statement No. II, pp. 30 - 55. Statement No. III, pp. 56 - 70. Statement No. IV, pp. 71 - 86.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1917-18,	Statement No. I, pp. 7 - 29. Statement No. II, pp. 30 - 55. Statement No. III, pp. 56 - 70. Statement No. IV, pp. 71 - 86.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1918-19	Statement No. I, pp. 7 - 31. Statement No. II, pp. 32 - 57. Statement No. III, pp. 58 - 72. Statement No. IV, pp. 73 - 88.
Report on the Trade Carried by Rail and		Statement No. I, pp. 7 - 31.

River in Bengal . BSBD, Calcutta,	1919-20	Statement No. II, pp. 32 - 57.
		Statement No. III, pp. 58 - 72.
		Statement No. IV, pp. 73 - 88.
Report on the Trade Carried by Rail and River in Bengal , BSBD, Calcutta,	1920-21	Statement No. I, pp. 7 - 31.
		Statement No. II, pp. 32 - 57.
		Statement No. III, pp. 58 - 72.
		Statement No. IV, pp. 73 - 88.

³² . Report on the Administration of Bengal , 1872-73, With a Statistical Summary ,Bengal Secretariats Press, Calcutta, 1872,p.218

³³ . Grunning, J.F, *Eastern Bengal and Assam District Gazetteers, Jalpaiguri*, Allahabad, the Pioneer Press, 1911.p.92

Chapter No. 3.9

Impact on Demography and Its Changing Characteristics

3.9. Impact on Demography and its Changing Characteristics:

Mode of communication has undoubtedly been an essential aspect to concentrate different civilizations, cities and trade centers. On Indian sub-continent, before the foundation of the railway the system of communication, in essence, depend on the waterway and roadway communication system. However, the demographic pattern doesn't only depend on the communication system, but it is a unique feature behind the changing pattern of population distribution. But, how far the changing mode of communication or transformation of transportation from primitive to the modern system like railway, took an essential role to change demographic pattern up to the middle of the 20th century? The quarry is very hard because there are several factors are co-related, and examine by the single parameter for an individual factor is too difficult. Hypothetically, we expect the argument that the railway took a significant role in the changing demographic pattern of North Bengal. It is true that smooth and modern communication may help to develop trade and commerce of any area, which may also help to increase trade centers; as a result semi-urban and urbanization is possible. According to census observations of distinct years of the districts of North Bengal, Railway took really a vital role to develop the trade centers, as well as in the process of urbanization, which change the pattern of demography in different blocks or sub-divisions of North Bengal.

We already discussed, geographically; North Bengal well communicated for the rivers like the *Ganges, Brahmaputra, Tista, Mahananda*, etc. Undoubtedly; from the primitive period, these rivers had a great impact on the society and economy of North Bengal. Important ancient and medieval towns of Northern Bengal mainly concentrated on the bank of the river, but after the introduction of the railway, the pattern of demography gradually changed. According to O'Malley's observation in the first half of the 20th century the new trade centers concentrated in the locality of the railway stations. He mentioned, "forty years ago almost all the centers of trade (at Rajshahi districts) were situated on the banks of rivers; however, since the opening of the railway, trade had naturally tended to concentrate in the neighborhood of the railway stations"¹.

This conversion happened due to the development of the export-import trade by the railway. Our findings indicate that in the year 1915-16, the percentage of the import and export by the railways are respectively 86.46% and 89.75% of the entire import and export trade in North Bengal (see the Table No. 3.3.11 and Table No.3.3.16). Before 1916, in average (1891-1916), the role of the railway in the import and export trade is respectively 82.25% and 90.52% in respect of total import and export. Therefore, the decline of the old trade centers, those concentrated on the river banks accelerated by the gradual expansion of the railway. Similarly, J.A. Vass also observed the conversion of the commercial centers of the Rangpur district during the post railway period. 'Forty years ago, almost all the

important trading villages and produce depots of the district (Rangpur) were situated on the bank of the rivers. Since the introduction of railways, which now traverse the district in all directions, there has been a general movement of trade to the neighborhood of railway stations, and the old commercial centers in the interior have declined in importance'². Our findings in the Chapter No.3.4 indicate that the rich agricultural market of North Bengal widely exposed due to development of railways, which basically accelerate the development of different new markets and trade centers. Our findings, in the Chapter No.3.3 as well indicate between the years 1891 to 1921, railways transported in average 83% of the total import. In export, the role of the railway was more dominant than import, here the average is above 90% of the total export. Therefore, new concentration and development of the urbanization and semi urbanization with the development of the railway was possible due to the transformation of the transportation system from conventional to modern like railways.

The changing nature of the urbanization or semi urbanization also indicates in the Census report of the Malda, 1951. 'The Railway did much to develop the district. At every railway station, a bazaar sprang up, and the cultivator profited largely by the competition of traders, in jute, rice and other country produce'³. In Jalpaiguri district, the extension of railways and road communication in addition to giving a boost to the plantation enterprise also opened the way for the growth of towns and markets close to the tea estates. In fact, almost all the towns in the region came to be in-variably situated at various points along the railway lines⁴. Another observation on Malda district shows the role of railway on demographic pattern. "In the Census of 1931, the only remarkable variation was in the south –east corner of the district, where Nawabganj and Nachole showed a considerable increase. It is difficult to ascribe a reason for this sudden development, but it may be due in part to the construction of the new railway line from Nawabganj to Abdulpur. Nawabganj has always been a large exporting center, and it is not unlikely that the facilities for transport have developed trade in that area. That would also account for the increase of 25 percent in the population of the town."⁵

3.9.1. Development of Railways and the Convergence of Population

Distribution:

In this chapter we have studied the development of the transport facility to reduce the divergence of population density between the police stations of North Bengal. Undoubtedly, the railway brought a revolution in the communication sector by the high technological benefit with the smooth and rapid communication. But how did it helped to bring the convergence in the population distribution of North Bengal? To examine the argument, we test the variation in density (persons per square mile) of the 53 police stations or administrative divisions of the five selected districts of North Bengal according to the census report of the 1872 to 1951.

3.9.1.1. Study on Malda District:

Table No.3.9.1.

Variation in Density (persons per square mile) of the Administrative Divisions of Malda District (1872-1951)

Divisions	1872	1881	1891	1901	1911	1921	1931	1941	1951	% of Increase (1872 To 1951)
Englishbazar	677	672	762	715	748	649	708	849	954	40.91
Kaliachak	576	559	626	716	796	762	795	938	1092	89.58
Malda	236	238	275	338	393	374	350	389	428	81.35
Habibpur	195	196	227	279	325	309	319	341	471	141.53
Ratua	252	308	415	451	551	527	558	670	754	199.20
Manikchak	219	268	361	386	472	452	462	530	635	189.95
Kharba	370	415	451	498	579	566	588	725	707	91.08
Harishan -drapur	263	294	320	318	381	480	551	667	675	156.65
Gajol	190	186	219	267	323	332	338	370	369	94.21
Bamangola	222	218	256	312	378	388	392	452	498	124.32
MEAN	320	335.4	391.2	428	494.6	483.9	506.1	593.1	658.3	
SD	162.09	155.45	170.62	159.46	161.52	137.53	154.34	198.01	220.31	
CV	50.65	46.34	43.61	37.25	32.65	28.42	30.49	33.38	33.46	

Source: *Census of India Vol.-VI, West Bengal, Sikkim and Chandernagore, Statement 1.32, p.174,*

In the above table, we calculate the trend of the population density (person per square mile) in the administrative divisions of Malda district between the years 1872 to 1951. According to our findings, before the foundation of railways (Census in 1872) the density of the population in the ten same divisions was highly uneven and the CV is 50.65, indicating huge variation in density within ten divisions of Malda district. The CV gradually declined after the foundation and development of railways, and it reached at the lowest point (28.42) in the year 1921.

The same table is strongly supporting the argument that the railway had a remarkable role to change the demographic pattern. If we follow the percentage of the growth of density, which calculated between the Census reports 1872 and 1951, the growth of density outstandingly increased in the five administrative divisions; Habibpur, Ratua, Manikchak, Harishchandrapur and Bamangola. Habibpur and Bamangola situate in the *Barind* region of the Malda district. In the year 1872, density of the Habibpur and Bamungola was respectively 195 and 222 which half from the Egnlishbazar and Kaliachk division. After the opening of the Katihar-Godagari line, the density increased outstandingly in the same divisions. In the year 1951, the density of the Habibpur and Bamangola is respectively 471 and 498, and the growth rate is 141.53% and 124.32%. District Census Handbook, Malda, 1961, strongly supports the same argument of that the Railway took an indispensable role in the population distribution. 'Another important feature in this decade (1900-10) was the opening of the Katihar-Godagari Railway (dated on. 1.01.1909) which traversed the district from north-west to south-east. As a natural corollary to the opening of a railway, various distribution centers sprang up in the district and also the development of competitive markets in jute, rice and other produces helped cultivators to profit considerably. This Railway also flung open the ways for immigration into the thinly populated areas. *Santals* took this opportunity to come over to the *barind* and engaged themselves in reclamation of waste lands⁶. According to M.O. Carter, 'the attempts at reclamation mentioned in this extract were continued shortly afterwards, when Santals migrated from Bihar and settled in the *Barind*. They cleared the jungle terraced the slopes and made the land fit for cultivation of winter rice.'⁷

Census of 1931 also indicates the role of transport facility in the demographic distribution. 'In the Census of 1931, the only remarkably variation was in the south-east corner of the district, where Nawabganj and Nachol showed a considerable increase. It is difficult to ascribe a reason for this sudden development, but it may be due to the railway line from Nawabganj to Abdulpur. Nawababganj has always been a large exporting center, and it is not unlikely that the facilities for the transport have developed trade in that area. That would also account for the increase of 25% in the population of the town.'⁸

The demographic pattern of the Ratua, Manikchak and Harischandrapur extraordinarily affected by the foundation of railways, according to the same table (Table

No.3.9.1) percentage of the growth of the density of are respectively 199.20%, 189.95% and 156.65%. Hence, no doubt, expansion of the railways accelerated the convergence of the population in North Bengal. This is also supported by the Census of 1951. 'Another result was to facilitate immigration into the thinly populated areas in the east of the district Immigrants consisted chiefly of Santals, who reclaimed waste lands in the Barind, and Sershabadia Muslims who cultivated the new alluvial formations in the *diara* tract, beside Bihari settlers who came into the northern police stations of the district and settled in Harischandrapur, Ratua and Manikchak.⁹

3.9.1.2. Study on West Dinajpur District:

Table No.3.9.2

Variation in Density (persons per square mile) of the Administrative Divisions of West Dinajpur (1872-1951)

Divisions	1872	1881	1891	1901	1911	1921	1931	1941	1951	% of Increase (1872 To 1951)
Hili	393	415	442	548	626	608	650	748	1141	190.33
Balurghat	243	257	274	339	387	376	402	463	706	190.53
Kumarjanj	168	177	189	234	267	259	377	415	505	200.59
Tapan	236	234	250	268	308	289	293	355	415	75.84
Gangarampur	276	274	292	314	361	339	381	417	483	75
Bansihari	274	286	291	303	349	330	348	373	382	39.41
Kushmandi	346	362	368	382	441	417	433	444	470	35.83
Kaliaganj	406	407	432	452	500	490	506	511	560	37.93
Hemtabad	265	358	355	360	371	362	371	388	569	114.71
Raiganj	322	316	313	318	327	319	317	352	547	69.87
Itahar	278	278	295	309	342	335	353	444	490	76.25
MEAN	291.54	305.81	318.27	347.90	389	374.90	402.81	446.36	569.81	
SD	70.30	73.79	75.76	87.86	100.69	99.17	99.86	111.057	208.02	
CV	24.11	24.13	23.80	25.25	25.88	26.45	24.79	24.88	36.50	

Source: *Census of India Vol.-VI, West Bengal, Sikkim and Chandernagore, Statement 1.32, p.175,*

Geographically, Dinajpur district is a vast alluvial plain with the high agricultural facility. The above table indicates that the CV is stable around 24 between the years 1872 to 1941. Probably, due to partition and migration, the difference of CV is comparatively high in the year 1951. The most striking feature is that, due to nature of land; the remoteness between the places was minimum, and, which successfully removed by the conventional mode. Therefore, here is no noticeable difference between the pre and post railway CV. However, some trade centers remarkable developed after the foundation of railway. Hilli, most important railway station of the NBSR developed as an important trade center. The growth of the population density at Hilli is 190.33% between the years 1872 to 1951. The Raiganj- Dinajpur line opened in 1888, and the Raiganj-Katihar line in 1889. During 1901-11, the condition of the transportation system was generally favorable for the development of the trade centers¹⁰. Hemtabad also developed as a trade center, and it was nearby of *Banglabari* railway station and the distance between two was only 5.5 km. The percentage of growth in the Hemtabad division is 114.71. At the early stage, Balurghat near about 25 km way from the railway station but it well communicated due to the *Atreyee* River and highly developed as a trade center. Here water communication took indispensable role, and the growth of population is 190.53%. Kumarganj was 41 km way from the Dinajpur railway station of NBSR but the centers sprung up due to well communication by the river *Atreyee*. The growth of the population in the same division is more than 200% and obviously; the role of conventional mode is significant.

3.9.1.3. Study on Jalpaiguri District:

Table No.3.9.3

Variation in Density (persons per square mile) of the Administrative Divisions of Jalpaiguri District (1872-1951)

Divisions	1872	1881	1891	1901	1911	1921	1931	1941	1951	% of Increase (1872 To 1951)
Jalpaiguri	293	406	447	444	462	431	461	541	622	112.28
Rajganj	192	238	220	211	228	224	201	208	210	9.37
Mainaguri	77	141	228	299	327	324	311	374	351	355.84
Nagrakata	85	155	251	329	364	356	370	375	397	367.05
Dhupguri	87	159	258	338	369	366	407	469	512	488.50
Mal	102	187	303	389	420	424	425	482	447	338.23
Matiali	88	160	260	334	360	363	449	463	534	506.81
Madarihath	34	62	101	159	244	273	319	364	405	1091.17

Falakata	46	83	135	214	328	366	383	427	454	886.95
Kalchani	12	23	37	62	113	142	181	226	249	1975
Alipurduar	24	44	72	123	222	278	300	354	441	1737.5
Kumargram	16	28	46	78	142	177	185	214	249	1456.25
MEAN	88	140.5	196.5	248.33	298.25	310.33	332.66	374.75	405.91	
SD	81.41	108.01	121.69	125.23	108.25	92.80	100.83	110.72	124.42	
CV	92.51	76.87	61.93	50.43	36.29	29.90	30.31	29.54	30.65	

Source: *Census of India Vol.-VI, West Bengal, Sikkim and Chandernagore, Statement 1.32, p.175,*

District Jalpaiguri situates on the foot hill of the Himalayas with vast plain that covered by dense forest. Before the foundation of the railway, the density was very thin excluding Jalpaiguri, Mal, and Rajganj police station. Before the foundation of the railway, the divergence was comparatively high and the CV is 92.51. It ensured due to the remoteness of the districts with dense forest. However, the administrative divisions of the *Tarai* and *Duars* region also opened up by the establishment of the tea garden in the remote region. At the same time, the migration of tea labourers affected the pattern of demography in Jalpaiguri district. According to D.H.E. Sunder's Settlement Report of 1895, 'the caste of colliers employed in tea gardens are *Paharias* who come from Nepal and Darjeeling; *Oraons*, *Mundas* and few *Kols*, who come from Chotonagpur district; *Uriyas* from Ganjam and *Santhals* from Santhal Parganas. *Meches*, *Garos* and *Dhimens*, who come from other sides of the Bramahputra, as also a few *Bhutias*, may also be seen working in gardens; however, their number is few'¹¹.

The Bengal Duars Railways (BDR) started its voyage on 15th January 1893, which accelerated the easy access of migrated labour for the tea gardens. We have already discussed, how the huge dense forest did was cleared for the foundation of railway in the same district. In the *Tarai* and *Duars* region, the river transport was difficult but in plain, it was available. Therefore, the opening of the BDR in the *Taria* and *Duars* region took the significant role to remove the remoteness of the region. New habitation center also sprung up for the establishment of the railway stations. These apart, Domohani on the left bank of the Tista, almost of the opposite of Jalpaiguri town, grew as a railway settlement with a small loco shop of the Bengal Duars Railway¹². In 1872, at Alipurduar police station, the density was only 24 people per square mile, which highly accelerated by the further development of the communication; the CBSR extended up to Alipurduar on 18th January 1900, later that also connected with the BDR, and final establishment of the brand-new railway line after partition as well took the significant role to urbanization, that changed the demographic pattern. 'The district (Jalpaiguri) has been a great deal of activity since 1947 on account of the new Assam Rail Link Project, the development of Alipur Duar town as a large railway center, and several road building projects connecting Assam and Duars.'¹³

3.9.1.4. Study on Darjeeling District:

Divisions	1872	1881	1891	1901	1911	1921	1931	1941	1951	% of increase (1872 To 1951)
Darjeeling	242	476	719	837	934	969	1091	1206	1564	546.28
Jore Bungalow	79	156	236	274	306	318	374	568	513	549.36
Pulbazar	77	151	228	265	296	307	340	402	508	559.74
Sukiapokri	30	60	90	105	117	122	153	197	208	593.33
Rangli Rangliot	46	90	137	159	177	184	184	227	264	473.91
Kurseong	78	154	256	259	236	231	298	339	392	402.56
Mirik	100	197	327	331	302	295	381	454	429	329
Siliguri	173	228	263	254	260	273	289	341	549	217.34
Kharibari	176	232	268	259	266	279	295	309	317	80.11
Phansidewa	199	263	303	293	300	315	332	368	367	84.42
Kalimpong	23	44	93	145	174	211	233	271	325	1313.04
Garubathan	7	19	27	42	50	61	77	88	98	1300
MEAN	102.5	172.5	245.58	268.58	284.83	297.08	337.25	397.5	461.16	
SD	76.77	123.63	176.43	198.49	220.14	226.47	254.61	283.21	371.44	
CV	74.90	71.67	71.84	73.90	77.28	76.23	75.49	71.24	80.54	

Source: *Census of India Vol.-VI, West Bengal, Sikkim and Chandernagore, Statement 1.32, p.175,*

In Darjeeling district, the findings are obviously indicating a negative impact of railways on demographic pattern of the district. Though the average increase of the density of all police stations from the year 1872 to 1951 is more than four times double, but the CV is exceptionally static 70 to 80. In the last year, it is remarkably high, 80.54. It basically happened due to the nature of land; Darjeeling is a highly mountain region where the extreme facility of transport for all the police stations was too difficult. As well as, all the stations are unsuitable for the habitation. Therefore, the difference in density occurred due to nature of landscape. The Darjeeling Himalayan Railway connected Darjeeling with Siliguri in 1881 and the modern motor vehicle started in 1930 between same places. As a result, few police stations facilitated with the better communication system but the others

remained backward. Development of the communication basically helped to increase the density of the major administrative and tourist centers, but the low density continued for the remote police stations. Therefore, the difference of the density between distant police stations and popular centers even continued up to 1951.

3.9.1.5. Study on Coochbehar State:

Divisions	1872	1881	1891	1901	1911	1921	1931	1941	1951	% of Increase (1872 To 1951)
Tufanganj	227	294	326	328	358	370	380	423	436	92.07
Dinhata	550	607	572	561	579	578	580	625	650	18.18
Sitai	411	453	428	419	433	432	434	462	394	-4.13
Coochbehar	439	489	454	427	459	465	466	527	603	37.35
Sitilkuchi	435	480	447	436	443	449	436	464	453	4.13
Mathabhanga	396	437	408	397	404	397	395	414	425	7.32
Mekliganj	401	463	453	445	457	435	421	404	402	0.24
Haldibari	356	411	403	437	459	449	432	506	540	51.68
MEAN	401.87	454.25	436.37	431.25	449	446.87	443	478.12	487.87	
SD	90.41	87.12	68.93	64.45	62.97	61.28	61.30	73.52	97.32	
CV	22.49	19.17	15.79	14.94	14.02	13.71	13.83	15.37	19.94	

Source: *Census of India Vol.-VI, West Bengal, Sikkim and Chandernagore, Statement 1.32, p.175,*

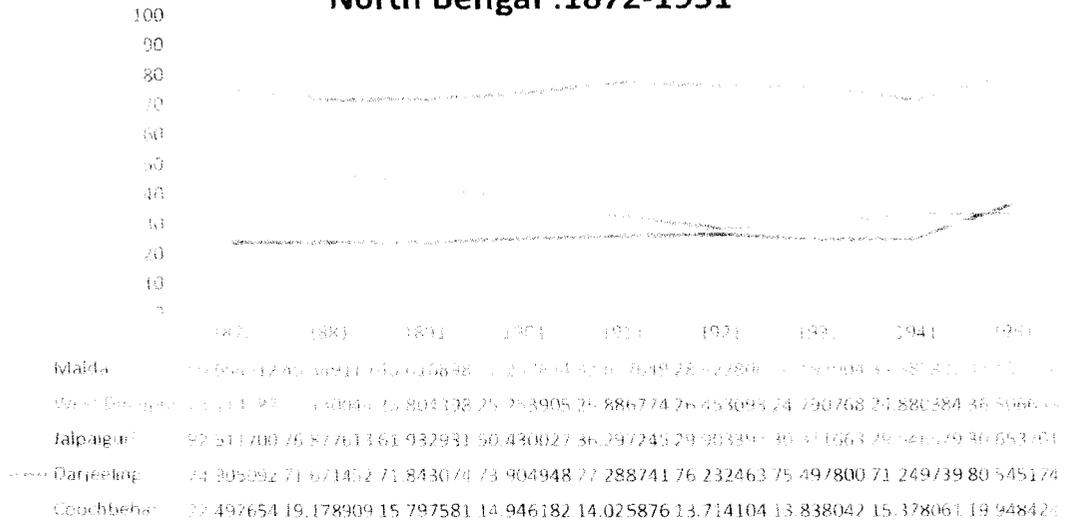
The Coochbehar, the only native state of our study area indicates comparatively high convergence in the population distribution. Physically, Coochbehar is a vast agricultural plain with the better traditional communication system, so why the average density before the foundation of the railway was comparatively high from any other districts of North Bengal (401 persons per square mile in 1872), and the distribution population was relatively more converged from any other districts of our selected study area. It was also possible due to the development of the conventional communication system by the Coochbehar State. The number of roads developed the communication system throughout the state. According to the Annual Administrative Report of Coochbehar, in the year 1878-79, the state had 223

miles of roads under the management of Public Works Department¹⁴. In 1893, Government also established a 'Communication Improvement Fund' to develop and care the transport system in the state¹⁵. In the second quarter of the 19th century, according to Buchanan Hamilton, the communication system in the state highly depended on climate. Almost all part within the state was available by bullock carts over a network of fair-weather track only between November and May. At the advent of the rainy season, the roads within the state almost become impossible for wheeled traffic¹⁶. The foundation of the railway reduced the obstacle of the communication, and the places nearby railway stations are developed as trade centers.

The Districts Census Handbook, Coochbehar 1951, also supports the above argument. 'The Gitaldaha–Mansahi Railway line opened in 1893, followed by the Mansahi – Coochbehar extension in 1898, and the another extension from Coochbehar to Alipurduar in 1900. This Railway which in 1913-1914 became the Coochbehar State Railway and the Bengal Duars State Railway did much to develop the resources of the country and greatly facilitated to develop the disposal of produce of all kinds. If only the climate were more salubrious, a rapid expansion of population might be expected but the unhealthiness of the climate more than counter balanced the productivity of the soil. Tufanganj kept its head above water owing to immigration from Rangpur but Haldibari recorded a substantial increase on account of its growing importance as a center of the jute trade, its situation on the Eastern Bengal Railway, and its comparative healthiness¹⁷'. 'Cultivation expanded, the cultivators benefited by the rise in the price of agricultural produce, and there was an increasing demand for labour, which was met by import of labourers from upcountry. The Gauhati extension of the Eastern Bengal Railway was built during the decade and helped to open out the south-east of the state'¹⁸.

3.9.2. Comparative Study of the CV of the Northern Bengal:

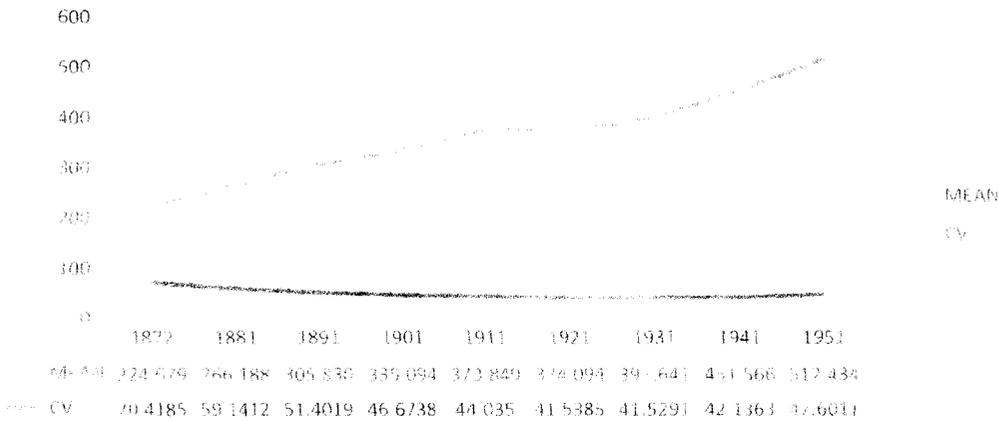
Table No.3.9.6
Comparative CV of the Density in the Districts of
North Bengal :1872-1951



Source: *Census of India Vol. VI, West Bengal, Sikkim and Chandernagore, Statement 1.32, p 175.*

The above table evidently denotes district wise variation and the trend of convergence in the population distribution between the years 1872 to 1951. Our findings, as a whole, indicate the trends of gradual downward movement of the CV in the post railway period except in the Darjeeling district. We may argue that the impact of the railway communication was comparatively better in the Jalpaiguri and Malda district. Darjeeling is the top position in the divergence of the population distribution, accordingly Coochbehar is the lowest. In average, in Coochbehar state the convergence of the population in the selected police stations is highest from any other district. In 1921, the average density is highly converged, and CV is comparatively low (13.71) from any other districts and census year.

Table No.3.9.7
Demographic Trend in North Bengal :1872-1951



Source: *Census of India Vol. VI, West Bengal, Sikkim and Chandernagore, Statement 1-32*
p.175.

Table No.3.9.7 calculated according to density of the population of 53 police stations of the five selected districts of North Bengal. The mean is indicating the progressive growth of the population density in North Bengal. The trend also indicates the gradual downward movement of CV of the population density of the 53 administrative divisions. In North Bengal before the foundation of the railway, CV is above 70, and after the development of railway, the CV fluctuates between 40 to 50. In 1941, the CV remarkably decreased and stable at around 41.

L.S.S. O'Malley, *Bengal District Gazetteers, Rajshahi*, Bengal Secretariat Book Depot, Calcutta, 1916, p.111

² J. A. Vas, *Eastern Bengal and Assam District Gazetteers*, Rangpur, 1911, reprinted in *India 1992* Indian Publishers' Distributors, Delhi, P.92

³ District Census Handbook, Malda, 1951, p.xiii.

⁴ Virginius Xaxa: *Colonial Capitalism and Underdevelopment in North Bengal* Reviewed work(s): Source: *Economic and Political Weekly*, Vol. 20, No. 39 (Sep. 28, 1985), pp. 1661.

⁵ M.O. Carter, p.37

⁶ District Census Handbook, Malda, 1961, p.xv.

⁷ M.O. Carter, Op.cit.p.2

⁸ . M.O. Carter, Op.cit.p37.

⁹ . District Census Handbook, Malda, 1951, p.xiii.

¹⁰ District Census Hand book ,West Dinajpur, 1951.p.xi

¹¹ . D.H.E. Sunder's Settlement Report of 1895, Cited in District Census Hand Book , Jalpaiguri, 1951,Appendix –IX, p.ccxx

¹² . Das Gupta, Ranajit, *Economy Society and Politics in Bengal: Jalpaiguri District 1869-1947*, Oxford University Press, Delhi, p.73

¹³ District Census Handbook ,Jalpaiguri, 1951,p.li

¹⁴ *The Annual Administrative Report of the Coochbehar State for the Year 1878-1879*. Coochbehar State Press, Coochbehar, 1880, p.69.

¹⁵ *The Annual Administrative Report of the Coochbehar State for the Year 1899-1900*, Coochbehar State Press, Coochbehar, 1901, p.41

¹⁶ . Majumder, Durgadas, Op. cit, p.114.

¹⁷ . District Census Hand book , Coochbehar,1951,pp.xxxv-xxxvi

¹⁸ District Census Hand book , Coochbehar,1951,p.xxxvi

Chapter No. 3.10

Impact on Native Culture and Society

J. Impact on Native Culture and Society:

It is argued that the transport is essential to that standard of individual consumption which we regard as the hall-mark of civilization, and the command of rapid and comfortable travel is itself regarded as an indispensable part of culture, yet the demand for transport is fundamental in human nature. It cannot compare with the essential desires for food, warmth, clothing and shelter. However, the collective demand for transport of an organized society with a high standard of living may be exceedingly strong. To some extent, therefore, transport is analogous to other services for which derived demand is very strong though direct demand is weak or non-existent; for example, justice, police or national defence. These cases all exhibit the same characteristic: that the satisfaction of the individual's elemental needs depends ultimately upon the provision of services for which the individual has a low conscious demand. The collective derived demand is, however, strong enough to ensure supply at the expense of the community¹.

Foundation of railway in northern Bengal was a great achievement by the Colonial authority. Undoubtedly, it had a significant impact upon the society of North Bengal. Bibhuti Mishra Bandhopadhyaya, a famous Bengali novelist has drawn a beautiful sensation of the first visit by train. Here, we are giving one example to realize the feeling among the people of Malda how they react after the foundation of railway. According to P. Mazumder, ancient ruler of Malda:

‘The Katihar–Godagari railway line was opened in 1909. I remember that on the day the first train was expected to come we a party of 4/5 person crossed the river and waited for the site of present Malda Court Railway Station to see the first train coming. There was no Railway station there at the Sadar station of Malda. The first train passed by the site of present Malda Court Station at about 2/3 p.m., and Babu Hariprasanna Sarkar of the Malda Court staff waved his handkerchief from a window of the passing train. We were delighted at the sight of the train and thought that our long-felt grievance was removed. It is no doubted strange that there was no Railway Station at the headquarters of the district. Some thought that the Railway authorities were misled by the name of Old Malda and took that place to be headquarters of the district and so the Nimasari (as the Old Malda station was then called) was constructed.’²

The above expression undoubtedly indicates how the people felt the necessity of the modern communication like the railway. Though, the transport policy of the colonial authority was mainly for their own political and commercial interest, even then the communication system radically changed with the foundation of railway. People also realized the need of better and faster communication.

Northern part of Bengal [before and after partition] is a highly diversified region in respect of ethnicity, economy and geography. Till the middle of the 19th Century, the social

structure of North Bengal was basically an agricultural base self-sufficient village society. Yes, there were some important trade centers and cities also, but the main structure of the society was agricultural base village economy, except few example of the growth of plantation industry from the middle of the 19th century in Darjeeling and Duars region. It is also significant, though the region directly connected with the foreign capital investment. As a result of that, the tea industry remarkably developed, but there was no fruitful and positive economic impact on the society of North Bengal. Virginius Xaxa analyzed the processes that generated the structural underdevelopment in North Bengal. Here a new method of production in the form of capitalistic plantation agriculture was introduced by foreign capital investment from the middle of the 19th century. However, North Bengal as compared to other parts of Bengal, contains several characteristics of deprivation. Indeed, there are structural differences between the northern and southern parts of Bengal. These are very much reflected in factors and variables currently used to refer to countries as underdeveloped. These include occupational differentiation, urbanization, education; levels of income, social services, health facilities and local labour market which are strikingly at a low stage of development in North Bengal. These are compounded by the absence of effective socio-economic institutions, which could be employed to counteract the condition of misery³.

Before the last decade of the 19th century, usually the control over the land was under the local inhabitants like Koch- Rajbanshi, Mech and Garo⁴. The remarkable factor is migration that increased extremely due to development of the railways from the last phase of the 19th century. Though, the key factors of the migration were vast fertile land with good agriculture market, comparatively better wage rate, probability of trade, employment scope in the tea garden and administration. We already studied all the above-mentioned factors in our previous chapters; and everyone related with the development of a smooth communication system which provides railway. Due to the growth of the modern communication, the rate of migration remarkably increased at the end of the 19th century to the beginning of the 20th century when the railways widening quickly in the Northern part of Bengal (see the table No. 3.7.10).

3.10.1. Cultural Interactions and Assimilation:

Theoretically, it is assumed that the cultural assimilation and interactions highly relate with the development of communication. Undoubtedly, our analysis critically points to the significant impact of railways on the traditional communication system of North Bengal. We have already discussed the massive impact of the railways on the economy of North Bengal. The study as well mentions that the medieval economic mode of North Bengal highly effected after the direct capitalist investment in land and plantation industry. With the changing economic structure, the society of North Bengal adversely affected.

However, according to our study area and period, it was a mainly one-sided impact due to a particular socio-economic condition. The long-term colonial supremacy over India established European culture as a dominant culture. At the same time, the native cultures were treated as a backward and subordinate. With the growing demand of western education, we follow a westernization trend all over India from the second half of the 19th century. Accordingly, the northern part of Bengal not differed from it. In order to study the cultural impact and assimilation, in North Bengal, we follow mainly two important trends; one, indirect westernization and sanskritization through the influence of Calcutta based Bengali middle-class culture another, direct westernization by the European culture. First, one happened in case of the indigenous community like Koch and Rajbanshi, and second one happened in case of Mech, Gorkha and Nepali community.

10.2. Sanskritization and Indirect Westernization:

At the beginning of the 19th Century, the agricultural land of North Bengal was basically under the indigenous castes like *Koch* and *Rajbanshi*. The village economy was self-sufficient and also stagnant, and there was no question of inferiority complex or identity crisis. Although, few commercial crops like jute and tobacco produced, as well as the rice had a common market, but there was no as such impact on the village economy of North Bengal. Introduction of plantation industry at Darjeeling and Duars had an also same impact in the rural economy of North Bengal. In 1878, the introduction of railways in North Bengal opened the door of North Bengal. Available of vast fertile land, prospectus of trade and high rate of food production due to expansion of worldwide agriculture market that linked the international and national market, were the factors behind the huge migration and direct investment in agricultural land. We have already discussed the role of railways to commercialize the agriculture products of North Bengal in the Chapter No.3.4. The commercialization of land, consequently, started in North Bengal with the growth of agriculture economy. Owing to above-mentioned reasons, large numbers of higher caste Bengali Hindu even *Marwari*, *Kabuli* traders invested their money in the land⁵ which caused the price hike in land.

In North Bengal, between the years 1891 and 1921 enormous migration changed the demography of this region (see the Table: 3.7.10). Simultaneously, due to high price of land, the natives' *jotedar* began to sell their land, thus the control over land gradually transformed into the hand of migrated higher caste people⁶. In 1905, 205 *jote* were auctioned at Falakata, Jalpaiguri where many Non- Bengali Marwari and Kabuli traders invested their money in the land⁷. Huge migration of Marwari community indicates the prosperity of trade in North Bengal. In 1961, at Coochbehar, 1860 Marwari migrated from Rajasthan⁸. *The Coochbehar Gazettes* indicate not only the Rajbanshi *Jotedar*, huge number of higher caste Bengali and few Muslims were as well enjoyed *Jotedari* in Coochbehar

State⁹. At the same time, the native communities were professionally peasant and had no interest on other professions. Thus, self-centric stagnant village economy was highly affected due to direct investment on land. Upendra Nath Barman claims that for small and the middle class *jotedars* it was extremely difficult to get even the little cash required to pay *zamindari tax*, many *jotedars* were forced to sell off their land¹⁰. According to our previous discussion (in the Chapter No.3.4), the railways undoubtedly helped to accelerate the commercialization of agriculture in North Bengal, but the fruit of the commercialization only restricted to the bigger *jotedars* and very little for the commoners. Therefore, the cream of the commercialization of agriculture exactly did not filter to the common agriculture labourer. According to Basu, 'the gradual penetration of moneylenders, merchants and middle class service groups as appendages of a market economy, brought significant change in the existing agrarian social structure as well. However, the *Rajbanshis* who constituted the bulk of *adhiars* in North Bengal did not benefit from the transformation¹¹. Thus, the commercialization of agriculture failed to protect the interest of the small farmers. In this changing mode of production, local inhabitants like *Rajbanshis* lost their unchallenged higher socio-economic status, which continued before 20th century.

In the changing mode of production, *Rajbanshi* caste gradually became the subordinate of Caste Hindu people. The *Rajbanshi jotedars* were basically cultivator. They would cultivate a part of a land directly, and the rest divided to the *Adiar*. The new Cast-Hindu investors or *jotedars* not belonged to agrarian community, and they would like to conduct the farming activities by the rent cultivators. It effected on the changing mode of production: consequently, *Rajbanshi jotedars* gradually detached themselves from direct cultivation, which helped to increase the number of non-cultivator *Rajbanshi jotedar*¹².

According to Basu 'in the late nineteenth and early twentieth centuries some significant changes had taken place in the socio-economic structure of north Bengal. One of the major effects of this change was that the *Rajbanshis* who once dominated the local society and economy were gradually subordinated by the newly settled dominant upper caste gentry. This domination of an essentially immigrant gentry as well as the cultural differences between them and the *Rajbanshis* created a sense of community solidarity among the latter. The most articulate section among the *Rajbanshis*, the elites, played an important role to whip up this community consciousness in order to mobilize the members of their caste for collective mobility'¹³.

3.10.2.1. Upper Caste Movement:

In the changing socio-economic condition, *Rajbanshi* lost their indigenous dominance and gradually became the subordinate of higher caste. They would treat as untouchable and lower caste¹⁴. Charu Chandra Sanyal, writing on history of Jalpaiguri district, mentioned that caste purity was strictly maintained and the people of higher and lower castes used to sit in

different rows on the occasion of any public lunch or dinner. Initially, although the Rajbansis were also regarded as *ajalchal* and they were not allowed to touch the wells of the upper castes, with the beginning of the *Kshatriyaization* movement these prejudices gradually disappeared¹⁵.

Due to strong neglect from the upper caste people and also after losing of socio-economic control over the society of North Bengal, few educated elites Rajbanshi realized the necessity of social upgradation or *Kshatriya* movement to establish the higher social status as a *Kshatriya*. The Rajbanshi leaders at last succeeded in getting recognition of their claimed *Kshatriya* status in the final report of Census-1911, where they were listed as separate Hindu caste, 'Rajbansi', with 'Kshatriya' in brackets. During the Census operations of 1921 and 1931, they once again mobilized the community and appealed to the Census authorities to return them as only 'Kshatriya', in place of 'Rajbansi Kshatriya'. Thus, the Rajbanshi caste leaders tried to mobilize the community around the Census for attaining a respectable position in social hierarchy. Using the issue of the census the leaders wanted to develop a community consciousness among the Rajbanshis, which could be further strengthened through the processes of 'Sanskritization' and 'Westernization'. The movement around census, therefore, was a part of a bigger process to establish a respectable self-image encoded in the *Kshatriya* identity. This process was closely connected with the formation of a caste association and the agenda it put forth for the construction and assertion of this new identity¹⁶.

3.10.2.2. Sanskritization:

The foundation of railway in North Bengal obviously helped to accelerate the cultural interaction between natives and other communities. We have already mentioned that the natives like Rajbanshi lost their socio-economic domination, which created an identity crisis. Their appeal to the caste took an essential role to sanskritize the community. We may argue that the railways undoubtedly helped to the natives to compare themselves with the other community. It was possible because the remoteness gradually diluted by the development of railways. At the same time, the upper caste movement under the Rajbanshi leaders accelerated the process of *sanskritization*.

The creation of myths was followed by appeals for the reform of socio-religious and cultural practices of the community; Hara Kishore Adhikari, one of the publicists for the caste movement, suggested three immediate steps for the upgradation of the status of the community. These were (a) adoption of *Kshatriya* like customs, (b) shortening of the period of *asauch* or ceremonial mourning after bereavement, and (c) acceptance of *Kshatriya* titles such as Barma, Roy, etc. in place of the existing ones like Sarkar, Das, Mandal, etc. Another

Rajbansi, Chandreswar Roy, prescribed yet some other measures to raise their social status. He asked his caste brethren not to allow their women to roam around in the markets and the fields as the upper caste Hindus did not allow their women such as freedom. Similarly, widow remarriage was to be discontinued. The food items which were not permitted by Hindu religion were not to be partaken of by the Rajbansis either. At the same time, initiative was also taken to get favorable rulings from the *pandits* of various places in support of their claim to Kshatriya origin and their right to wear the sacred thread¹⁷.

3.10.2.3. Changing Economy and its impact on Women Status:

This is signifying, due to gradual impact of *Sanskritization* the direct participation of women in the production system was not appreciated. This helped to increase the hatred to the self-sufficient women; as a result the respect and the status of Rajbanshi women were gradually decreased. However, in the middle of 20th century, according to few observations even the wives of the Rajbanshi *jotedar's* also took essential part in the cultivation system¹⁸. Even so, due to strong impact of the *Sanskritization*, elite Rajbanshis removed their women from the production system. Significantly, because of poor economical compulsion, even in the late decades of the 20th century, huge number of Rajbanshi women also participated as agricultural labour. Conversely, after achieving economic solvency, women were kept into the house. At the same time, women were not allowed to open marketing, selling of finished rice product, weaving of cloth and fishing net. Due to 20th century's socio-economic environment and strong impact of *Sanskritization*, women were gradually displaced from the production system. Therefore, economically the society was transformed into a complete male-dominated society.

Before 20th Century, in North Bengal, there was no such impact of western education, and the condition of women was very poor (see the Table: 3.10.1). According to Table-3.10.2, very few elite Rajbanshi obtained education where the percentage of the English educated person was more miserable. In the middle of the 20th Century a small number of Rajbanshi elites send their daughters to school, but they had no interest in higher education¹⁹. Even in the Royal family, Suniti Devi took a keen interest to expand women education in Coochbehar state, but instead of all facilities to the development of higher education, she restricted herself within the expansion of school education²⁰. At that time, there was no clear idea about the need of education and the women were nothing just waited for marriage, and the literate women would get little priority by the elite Rajbanshi. Due to Caste Hindu association, the society would not allow women to work outside the home²¹. Accordingly, from the early decades of the 20th century, the expansion of education basically failed to protect the self-sufficient women, and the women were not entitled for the modern jobs. At the same time, the dowry was introduced and practiced by higher

educated elite Rajbanshi boys²² due to close contact with Caste Hindu Culture. In fact, the introduction of modern education in the early 20th century was like a lamp, which brought both, the light and black smoke for the Rajbanshi women. Although, at the end of the same century, as many lights became bright and as much smoke became clear.

Table: 3.10.1
Development of Women Education at Coochbehar State

Year	Percentage of Education
1901	0.40
1911	0.06
1921	0.90
1931	1.20
1941	1.76
1951	4.78
1961	9.00
1971	11.90
1981	19.90

Source: *Census of India 1901-1981, Cited in, Chakraborty, Chhanda, Kochbehare Nari Sikshar Bibartan, Madhuparni, Bises Coochbehar Jila Sankha, August 1990, Ed. By Ananda Gopal Ghosh, Chief Ed. Agitesh Bhattacharya, Balurghat, W.B., pp.203-211,*

Table-3.10.2
Educational Status of the Rajbanshi's

Year	Total population	Literate	Percentage	Literate in English	Percentage
1911	14,54,173	73,646	5.07	1,221	0.08
1921	16,63,948	69,140	5.78	5,151	0.31

Source: *Census of India, 1921, Vol.V, Pt. II, Bengal, Table, IX,p.84*

No doubt the caste movement had an essential impact on the socio- economic improvement of the Rajbanshi. However, at the same time the upper caste movement of the Rajbanshi community affected the social status of women. To set as a *Kshatriya* status, the leader of the '*Kshatriya Movement*' appealed to stop the widow and adult marriage. As well as, like higher caste culture, they rejected the open marketing and agricultural activities by the women²³. From the beginning of the 20th Century, due to upward social movement,

the women, lost their status in the marriage system which helped to initiate the reversal of 'Kanyapan' or modern dowry²⁴. Without filtration, they accurately try to imitate the Caste Hindu Culture which allowed few evil social practices like; child marriage, *parda* system, dowry, etc. Although, the *Kshatriya Samiti* strongly protested the introduction of the caste Hindu dowry system but they failed²⁵. Unfortunately, women did not have the enough socio-economic condition to save their indigenous rights from the male-dominated elite caste movement. In the changing mode of production and socio-cultural environment, women would not allow to participate in the production system and would keep into the house, which indicate the introduction of Caste-Hindu '*parda*' system thus, the Rajbanshi women also began to use '*ghomta*'. Women were nothing just for sex and household work like as a family slave. As well as due to gradual increasing of marriage cost as a dowry culture, the birth of girl child was not blessing for the poor people. After losing every socio-economic privilege, Rajbanshi women completely transformed as a burden of society. Therefore, the changing socio-economic condition with the development of the communication system was the reason behind the destruction of women right and privileges.

3.10.3. Direct Westernization:

We have already mentioned in North Bengal, we follow mainly two important trends; one, indirect westernization and *sanskritization* through the influence of Calcutta base Bengali middle-class culture another, direct westernization by the European culture. First, one happened in case of the indigenous community like Koch and Rajbanshi, and second one happened in case of Mech, Gorkha and Nepali community.

Sanyal mentioned that the Meches were conservative and rarely went out of their forest habitation; therefore, there was little probability of cultural interaction. Even in the middle of the 19th century, with the establishment of tea estates in the Duars region, they engaged as labourers. However, earlier the Meches did not accept the Europeans culture. Here it is interesting that at the end of 19th century when the Rajbanshis were being highly influenced by the Bengali culture, at the same time the Meches keep distance from the outer world influence. In Northern Bengal, at the same time and place the impact of modernization varied according to flexibility and acceptability of the castes and tribes. In case of the Rajbanshis, it was possible due to elite acceptability where the Royal family of the Coochbehar state took integral part. Even so, the condition was no longer same; the Christians took an essential role to spread the English education and enlightenment in the Mech people, and they adopted some of the patterns of Western culture in dress, food, etc. However, instead of they lost some of their own culture²⁶. According to Sanyal, 'the impact of industrialism has no doubt left a definite imprint on their present character'²⁷. Even in the first quarter of the 20th century they practiced '*Jhum*' cultivation and the short-staple cotton was their main cash crop. Before the Second World War, the Japanese used to buy

this short staple cotton to mix with wool. Nevertheless, after the war remarkably decreased and practically nil due to competition with mill made yarn and imported cotton of longer staple²⁸ (see the Chapter: 3.5.3). Sanyal as well mentioned that before the Second World War, the Meches never suffered by any debt. No money-lender would see in their villages. The village production was sufficient to meet their requirements. Due to the world wide economic depression, particularly during the Second World War, they had to run into debt and the liabilities increased by leaps and bonds. The educated section is gradually becoming foppish and extravagant due to western impact on culture, but the source of income (basically agriculture economy) failed to meet their requirements. Therefore, some families bound to sell their lands to pay up the debt²⁹. However, the Rajbanshis started to sell land due to high price of land for the commercialization of agriculture at the end of the 19th century

3.10.4. Railway, Caste and Colour:

On 18th August, 1853, in *The New York Daily Tribune*, Karle Marks hoped that the caste system in India would be dissolved by the foundation of modern industry through the development of railway³⁰. Practically, it was not taken place in India, even after hundred years after the foundation of the railway. Since the foundation, few orthodox upper class Hindus strongly criticized the foundation and expansion of railway in India due to fear of losing caste purity by traveling with the untouchables. Swami Vivekananda states in his traveling account '*Paribrazak*'; when the first railway started at Mysore few *Brahmins* went to see the train from faraway, and they were punished and displaced from their caste³¹. In 1874, one Hindu deplored the fact that the railways seated the sweepers, the *chamars* and the like classes in the same carriage along with Hindustani of the higher order. The elite Muslims of Lucknow also demand separate carriage for the respectable classes of the natives. All the railway companies did not give any interest to the proposals on distinctions of carriage according to cast and creed³².

Due to the foundation of the NBSR, considerably the European populations as an employee in Railway were increased, and it was possible when the train extended from Sara to Jalpaiguri. Development of the railways in North Bengal formed another crisis of the racial discrimination in law and order. According to latter from Lord H. Ulick Browne, Commissioner of the Rajshahye and Coochbehar, he suggested white constable for the European offenders those who were employed under the railway because the law and order were impossible by the native police due to the racial repugnance of the European, and he also recommended a separate cell in jail for the European offenders³³. It is remarkable; few European scholars strongly demand that the railways help to dilute the racial discrimination in India. Practically, the authority did not follow in their part. According to Browne's letter, 'a serious offense under the Railway Act involving imprisonment on conviction may be committed by European guards or drivers any day; and even if a Native Deputy Magistrate

has powers to try European British Subject for the same offense it is very desirable that such person should be tried by a Europeans officer³⁴. European employees on the railway had special treatment in case of offense and punishment also. Therefore, clearly, the Indian employees on the railways were not equally treated by the Colonial authority.

Bibhuti Bhushan Bandhopadhyaya, a famous Bengali novelist has drawn a beautiful sensation of the first visit of a train by innocent village kids. Here, the writer has drawn a wonder feeling of two kids *Apu* and *Durga* to their first look at the train³⁵. In North Bengal, we have some interesting feeling. Afjal Hassain a resident near Gitaldaha station, Coochbehar explained, at childhood the narrator would wait near the rail crossing for passing railway carriage and shouted for biscuits from the European passengers. It was a well-known story that the European passengers would throw biscuits from the moving train for the poor Indian kids³⁶. Another example by Nisith Kumar Chakraborty, resident near Bamanhat Station has narrated a brutal picture of the color discrimination by the white Europeans. According to him, the above picture is something different. The narrator also would wait for the biscuit near the railway line in his childhood. The European passenger as well would throw the biscuit to the kids. To make fun, after throwing the biscuits they would clap and say 'looks Indian dog, Indian dog'³⁷. Thus, they would like to enjoy the hungriness and poverty of poor Indian kids.

3.10.5. Impact on Pilgrimage Culture:

Pilgrimage is one of South Asia's oldest and most popular cultural practices. It was influenced by the new transportation technology in the form of the railways³⁸. The state of Coochbehar was also well known for a number of religious festivals and *Mela*. Especially, *Ras Mela* was famous of them, which organized near Madan Mohan Bari of Coochbehar Town. Huge number of Hindu pilgrimage and Muslim people also would participate, and they would use bullock and buffalo cart. They used to carry cooking utensils and essential commodities for staying outside the 'Mela' ground by making temporary tent³⁹. Extensively, people usually used bullock and buffalo cart to participate in any festival and *mela*. Poor people had no option to participate at any long-distance religious festival except walking. The pilgrimage culture widely changed after the foundation of Railway, people liked to use the railway to enjoy the mela with comfort journey. Due to massive use of railways by the pilgrimage, the number of passenger would increase during *mela* period, and according to the demand of huge passenger, the Coochbehar State Railway also allotted additional train⁴⁰. The conventional pilgrimage culture was highly influenced by the modern railway net work. It became easier to the subcontinent pilgrimage to participate in the various festivals of Coochbehar state, and it was also more convenient to the people of state to participate in the famous religious festivals (*mela*) of India like Kamakhya, Puri, Kumbha, etc. According to another description by Moonshi Jadunath Ghosh, the king of Coochbehar started a pilgrimage on 24th *Magh*, 1242 B.S. (1836 AD) for holy Benaras. He has clearly

mentioned the problems of the water route which faced the king and his disciples throughout the journey. They finally reached Benaras on 28th Asar 1244 B.S, and it took near about one and half year by boat⁴¹. After the foundation of NBSR and CSR, the same journey became easy, and it would take only two or three days. Accordingly; railways helped to build up the state as a pilgrimage and tourist centre and as well linked the people of the state with subcontinent pilgrimage practices. Coochbehar state used an advertisement for the people of state to popularize the festivals of the state. According to the advertisement of the festival of *Deviganj Rath, Jatra* in *The Coochbehar Gazette*, 1893, the state clearly indicated the accessibility of railways to attract the pilgrimage⁴². Therefore, the availability of railway was used to popularize the festivals and pilgrimage practices. Railways gradually became an integral part of pilgrimage practice.

Before railway, general people used to walk to communicate with their relative. During that time, it was difficult to continue the relationship like parents to with her daughter after marriage due to inadequate of postal, telegraph or any other modern communication system even when the distance not more than 50 km. So why the people would go to their 'Bangser Bari' or 'Sagai Bari' (House of Guest) yearly one or two times for 15 to 30 days. The foundation of railway changed the 'guest culture' (*sagai samparka*) of the state. The people would have been used rail net work frequently throughout the year, and it was possible to communicate with their nearest within a day⁴³.

The foundation of railways in northern Bengal, as well helped to dilute the remoteness of this region. It strongly jerked the village centric self-sufficient stagnant society of the North Bengal. Flow of commercialization in agriculture and so-called modernization flooded the northern basin of Bengal that deadly affected the culture and society of the same. This is the first time, the region connected with the feeling of greater India and Bengal. In some places like Darjeeling, the native culture highly affected by the European culture, here even today we observe a strong impact of the western fashion, food habit and lifestyle. Because before 1911, Darjeeling was a summer capital of India, to the colonial authority it was home way to home.

3.10.6. Industrialization and Impact on Fashion:

Industrialization had a great impact on the society of North Bengal. Due to development of the communication system in the northern region of Bengal, it was easy to penetrate the western industrial finished goods. We already discussed the impact of industrialization on the handloom production of North Bengal (in the Chapter No. 3.5.3). The native people started to use the mill made cloth instead of handloom cloth. Not only, in cloth, the industrialization touched every corner of life. The concept of fashion dramatically changed. Native people like Rajbanshi would maintain a distinctive fashion and style. Rajbanshi women wear unique dress or *sari* of blue or purple colour which known as *fota*⁴⁴.

Sunders (1895) as well described the Rajbanshi fashion and dress style which continued to the last half of the 19th century.

'Rajbansi and Muhammadan women wear a *sari* or wrapper called *phota-kapor* round them, from over their breasts up to their ankles. It is made in the district, and costs from Re. 1 to Rs. 3. Men wear a jacket called *piran*, which costs 10 *annas*; also a *chudder* round their necks and a *dhoti* round their loins. These cost from 12 *annas* to Rs. 1 each. Men also carry a small round bag in which they keep betel nut, lime, etc. It is called *botua*. Some of them also carry a *jeb* or *naminja*, which is a larger bag made of locally manufactured cloth. Papers, money, and other articles are conveyed in it. Money is also carried in a *jali* and in a *ganjia*, which are narrow, long bags worn round the waist over the dhoti. Among children girls are allowed to run naked until the third year; boys until the fifth year. Girls wear a sari from waist to ankles up to the fifth or sixth year. Among Muhammadans this is called the *hetpatani*. After the sixth year the sari is worn from over the breasts to the ankles. This is called the *aguribar-kapor*⁴⁵. There was no practice of *Ghomta* or *parda* and the head was always uncovered⁴⁶

The picture significantly changed at the first half of the 20th century. We have already discussed the process and impact of sanskritization on the Rajbanshi society. We also mentioned that the westernize characteristics like western education and culture entered into the Rajbanshi society via Calcutta orient Bengali middle-class culture, where the ruler of the Coochbehar state took a pioneering role. The Rajbanshi women started the practice of *ghomta* and began to wear the *sari* like as Bengali women. Few elites and educated Rajbanshi men some time occasionally wear shirt, pant and coat like as the Europeans and Bengali Babu. At the early stage, this fashion style basically practiced in the higher-class Rajbanshi people, but gradually it penetrated to the lower strata.

¹. Michael, R. Bonavia, *The Economics of Transport*, Digswell Place, James Nisbet & Co.Ltd and Cambridge University Press,p.4.

². District Census hand book Malda 1961, p.iv

³. Virginius Xaxa :Colonial Capitalism and Underdevelopment in North Bengal, Op cit.p.1659

⁴ Swaraj Basu,p.50

⁵. Grunning, J.F, *Eastern Bengal and Assam District Gazetteers, Jalpaiguri*, Alahabad, the Pioneer Press, 1911.p.32

⁶ . According to his(Amit Mitra) calculation , in this (Falakata,Jalpaiguri) *tahsil* , the Rajbansis held 40 per cent of the total *jotes* in 1894 and around 34 per cent in 1905.
Swaraj Basu, Op cit.p.51

⁷ Grunning, J.F, Op.cit p.32

⁸ Durga Das Majumder ,Gazetteer of India, West Bengal,Dist: Coochbehar,1977,p.46

⁹ . The Coochbehar Gazette (between 1900-1945), Coochbehar State Press, Coochbehar

¹⁰ . Upendra Nath Barman: Uttar Banglar Sekal O Amar Jiban Smriti, Jalpaiguri, (Bengali)1985,p.14

¹¹ . Swaraj Basu, Op.cit.p.55

¹² . "The prevailing practice of the 'jotedars' themselves cultivating their land was increasingly discontinued and a class of non- cultivating 'jotedars' expanded"
Swaraj Basu, Op cit.p.50

¹³ Swaraj Basu, Op cit.p.55

¹⁴ . Swaraj Basu, Op cit.p.63

¹⁵ .C.C. Sanyal: *Jalpaiguri Saharer Ekso Bachar*, in *Jalpaiguri Jela Satabarsapurti Smarak Grantha* (Bengali), Jalpaiguri, 1970, pp.96-99. Cited in Swaraj Basu, Op cit.p.63

¹⁶ . Swaraj Basu, Op cit.p.70.

¹⁷ . Swaraj Basu, Op cit.p.67-68.

¹⁸ . Interview with Karuna Kanta Roy ,son of Rajbanshi Jotedar, vill+p.o.: Ambari ,Coochbehar, W.B. dated on: 28.02.2012.

¹⁹ Interview with Manindra Nath Das, Vill & P.O: Bhatibari, Alipurduar, Dist: Jalpaiguri, West Bengal, Dated on 20.2.2012.

And

Charu Chandra Sanyal, Op cit,p.89-120

²⁰ . Chakraborty,Chhanda, *Kochbehare Nari Sikshar Bibartan*, Madhuparni, Bises Coochbehar Jila Sankha, August 1990, Ed. By Ananda Gopal Ghosh, Chief Ed. Ajitesh Bhattacharya, Balurghat, W.B., p.207

²¹ . Interview with Manindra Nath Das, Dated on 20.2.2012.

²² . According to him 'Rajbanshi jotedars started competition by giving secrete dowry to catch the modern educated bridegroom. Because, even in the middle of 20th Century it was not open, letter on gradually it transformed as a social status.'

Interview from Karuna Kanta Roy

Charu Chandara Sanyal, Op cit,p.89-120

²³ . He (Chandreswar Roy) asked his caste brethren not to allow their women to roam around in the markets and the fields as the upper caste Hindus did not allow their women such freedom. Similarly widow remarriage was to be discontinued.

Swaraj Basu, Op cit.p.68

²⁴ . " The reversal of position due to the close association with the caste Hindus where heavy dowry is often demanded from the guardian of the girl"

Charu Chandara Sanyal, Op cit,p.91

"While historical evidence is suggestive of dowry's preeminence among most castes in Bengal, in what follows I will be paying particular attention to its destructive effects among the so-called upper castes, or those that were overtly involved in the movement for upward social mobility along castist lines."

Rochona Majumdar,Snehalata's death: Dowry and women's agency in colonial Bengal,*Indian Economic Social History Review* 2004 41: 433DOI: 10.1177/001946460404100404,p.437

²⁵ . "The Samiti condemned the caste Hindu practice of giving dowry by the parents of the bride .Strict adherence to the 'sastric' rituals and rousing of social awareness against the introduction of dowry in Rajbanshi society were also stressed"

Sukhbilas Barma:North Bengal and Its People, Socio-Political Movement in North Bengal, V-I,Ed.Sukhbilas Barma,Global Vision Publishing House, New Delhi,2007,p.24

²⁶ . Charu Chandra Sanyal: The Meches and the Totos ,Two Sub- Himalayan Tribes of North Bengal, Unuversity of North Bengal, Darjeeling,1973,pp.7-9.

²⁷ . Charu Chandra Sanyal: The Meches and the Totos, Op cit. p.9.

²⁸ . Charu Chandra Sanyal: The Meches and the Totos, Op Cit.pp.9-10.

²⁹ . Charu Chandra Sanyal: The Meches and the Totos, Op Cit.pp.11

³⁰ . Karle Marks: *The New York Daily Tribune*, On 18th August, 1853, Pradosh Chowdhury, Op cit p.67

³¹ . Swami Vibekananda : '*Paribrazak*' , Cited in Pradosh Chowdhury, Op cit p.68

³² ' As early as 1854, the Chief Engineer of the Madras Railway said it was not the responsibility of the railway to recognize the distinctions of creed and caste, so as to provide one carriage for a Brahmin and another. The only distinction he recommended was that which can be purchased by money.' Cited in Pradosh Chowdhury, Op cit p.68

³³ .Letter from , Lord H. Ulick Browne, Commissioner of Rajshahye and Coochbehar to the Secretary , Govt. Of Bengal, File no. A, Judicial Department, Dated on 14th Nov.1877.

³⁴ .ibid.

³⁵ . Pradosh Chaudhury Op.cit.p.87

³⁶ . Interview with Afjail Hossain, Resident near Gitaldaha Station, Dinhata, Coochbehar. West Bengal, Date of Birth :15.8.1942, interview date: 21.7.2012

³⁷ . Interview with Nisith Kumar Chakraborty , Resident near Bamanhat Station, Dinhata, Coochbehar, West Bengal, Date of Birth :11.01.1940, interview date: 18.7.2012

³⁸ Kerr, Ian J, *Reworking a Popular Religious Practice : The Effect of Railways on Pilgrimage in the 19th and 20th Century South Asia*, Railways in Modern India, Ed. Kerr, Ian J, Oxford University Press, New Delhi, P.306.

³⁹ . Roy, Charu Chandra, '*Coochbeharer Mela*', Madhuparni, Bises Coochbehar Jela Sankha, Ed. Ajitesh Bhattacharjee, 1990, p.345. (Bengali)

⁴⁰ . Ibid.

⁴¹ . Munshi Jadunath Ghose : *The Rajopakhan or History of Coochbehar*, Translated by Rev .R. Robinson , Printed by C.B. Lewis, at the Baptist Mission Press, Calcutta,1874,p.24.

⁴² . Interview with Dr. Indra Madhab Das, Ph.D. Scholar, Department of Bengali, North Bengal University, interview on 04.01.2010.

⁴⁴ . G.E. Lambourn, Op cit.p.31

⁴⁵ . D.H.E. Sunder, Op. cit. p.154

⁴⁶ . L.S.S. O'Malley: *Bengal District Gazetteers, Darjeeling*, The Bengal Secretariat Book Depot,1907,Reprinted in 1985,199, Logos Press , New Delhi, p.47.