REVIEWED INTERNATIONAL JOURNAL

# Electronic International Interdisciplinary Research Journal (EIIRJ)

ISSN: 2277-8721)

Impact factor (IIFS): 0.987

Bi-Monthly


VOL - III | ISSUES - II | Mar -Apr | [2014]



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# GROWTH AND DECLINE OF KOLKATA PORT – A GEOGRAPHICAL PERSPECTIVE

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**Abstract**

*Kolkata Port is a Riverine port in the city of Kolkata, India, located around 203 km from the sea. It is the oldest operating port in India and was constructed by the British East India Company. In the 19th century Kolkata Port was the premier port in British India. After independence the volume of throughput has started declining and its importance decreased because of factors including the Partition of Bengal (1947), silting of Hugli River, changes in trade, development of rail transportation, reduction in size of the port hinterland, economic stagnation in eastern India etc. Due to the constraints of the river (like silting, sandbars etc.) no seagoing vessel above 200 Gross Register Tonnage (GRT) is allowed to navigate without a qualified pilot of the Kolkata Port Trust. This paper aims to find out the causes of decline and suggests some recommendations for future development of the port.*

**Key Words:**

*Colonial growth, changes in trade, silting and diversion of River, dredging*.

## Introduction

The Kolkata Port Trust (KoPT) manages two separate dock agglomerations - the Kolkata Dock System (KDS) and the Haldia Dock Complex (HDC). KDS is situated on the left bank of the Hooghly River at 22°32′53″ N. 88°18′05″ E. (Kolkata Dock System) about 203 km upstream from the sea. The total pilotage distance to KDS is 221 kilometres, comprising 148 kilometres in River and 75 kilometres in sea, and for HDC is 121 kilometres, comprising 46 kilometres in River and 75 kilometres in sea. The

average turn around time per vessel was 4.49 days for Kolkata Dock System and 3.99 for Haldia Dock Complex (2012-'13).

Haldia is a major Riverport and industrial belt located approximately 50 km southwest of (Calcutta) Kolkata near the mouth of the Hooghly River, one of the distributaries of the Ganges. It is situated at 22°02′N 88°06′E around 60 kilometres away from the pilotage station. Haldia developed as a major trade port for Kolkata, intended mainly for bulk cargoes. Haldia Dock, located on of the major trading centre in the region, was commissioned by Kolkata Port Trust in 1977. The complex features composite cargo handling facilities with particular emphasis on bulk cargo. It is due to the port of Haldia, the place has emerged as a commercial hub of West Bengal. At present, the port handles an annual cargo of around 21 million tonnes that is almost double of Kolkata Port. The current contribution of port to import is 15.89 million tonnes, whereas 4.80 tonnes is exported from the port. Three Oil Jetties with an overall capacity of 16 million tonnes handle crude POL products that are featured in the dock.

**Historical Background**

The sea coast of the Bay of Bengal and the then Hooghly channel had been a happy hunting ground for Indian people and merchants. In 1690 when the English decided to settle at the then Calcutta, which was 132 km of difficult navigation upstream, military consideration played an important role. Having trouble with the Mughals at Hooghly in 1686, the British people found Sutanuti more suitable for navigational advantage and commercial benefits. The Calcutta Reach had deep water along the eastern bank from Govindapur to Garden Reach, offering the best anchorage for ocean going vessels. Calcutta port was unique not only because of very good anchorage but also for its importance of all colonial activities-military, political, commercial and administrative. In 1712, a dry dock was constructed which was not equipped for warships and the Dalhousie tank was converted into a wet dock with facilities for launching vessels. This wet dock conversion took place at Colonel Clive's suggestion in 1759 after the Battle of Plassey.

The trade of the Company and its servants expanded very fast. Colonel Watson designed and then construction of wet docks between Tolly Nulla and Kidderpore commenced in 1781. About 100000 pounds were spent by him to divert the Nullah from its old course. He also started working on a dry dock and a shipbuilding yard.The next phase of improvement took place when Messrs Anderson Fergusson and Henry submitted a project to the Govt., for the construction of 8 Jetties (afterward extended to 11 Jetties). The expansion of the trade and the destructive cyclones of 1842 and 1866 forced the improvement of the

port. In the early eighteenth century, boats were stranded in a cyclone in the locality called Dingabhanga (broken skiffs). In fact, the East India Company's settlement itself changed the course of the Hooghly River: the sinking of the (ship Royal) James and Mary in 1696 and the formation of the Sumatra Sand resulted in the gradual formation of sandbanks on the left bank. The river withdrew from the left to the right bank, throwing (sic) the large chunk of land called the Strand. The construction of the Strand Road was taken up by the Lottery or Calcutta Improvement Committee in 1820 and the shipbuilders of Clive Street shifted their establishments to Howrah. The Strand Bank lands from Chandpal Ghat to Ahiritola were leased to the Port Trust on its formation by the Government in perpetuity.

One committee was appointed to improve the port for mercantile and shipping interest on the basis of the design by Sir Bradford Leslie for a continuous wharf and wall from Clive Ghat to Chandpal Ghat. Based on the report of the committee the Lieutenant Governor of Bengal proposed to the Govt. of India to constitute a Trust for the port and the city of Calcutta. The Board of Trust was constituted to represent the Govt. interest in trade, shipping (both European and Indian), engineering, marine and customs related matters. Calcutta port became an important part of the greater world economy system.

In 1869 the Public Works Department had nearly completed the reconstruction and improvement of the port to some extent. Following the shift of power from the company to the British crown, a port commission was set up on 17$^{th}$ Oct, 1870 by an Act (Calcutta Port Act-V of 1869) the Governor General in Council gave his assent for the formation of Port Commissioners with V.I Schalch as the chairman.. The Port Commissioners, nine in number were empowered to see smooth functioning of the port in the second half of the nineteenth century. After the freedom of the country, the port commission existed until the year 1975. Before this time, Major Port Trust Act of the year 1963 has come into force.

Gradually the whole eastern and central India came under the control of Calcutta port. The passing of the Hooghly Bridge Act (Act IX of the Bengal Council, 1871) provided the responsibilities of maintenance and management of the bridge to the port commissioners from 1$^{st}$ February, 1875. Later the success of the commissioners to built a railway bridge and central station to bring the East Indian Railway lines into connection with the jetties, wharves and store houses reflected the symbiosis which existed between the economy and polity of the vast hinterland.

The revolutionary changes in marine communication took place with steam ships and the opening of the Suez Canal in the end of the year 1869 which shortened the distance between England and India by 6500 km. The construction of Kidderpore dock started to handle the import and export trade with suitable

accommodation. The export of coal started from 1893. The amount was 4282 tones during 1895-'96 which increased to 105842 tons in 1898-'99 and 877895 tons in 1898-'99. Mr. Backett recommended single bottom opening ship for coal loading at Kidderpore docks. By 1900 it was felt that additional accommodation was needed for coal trade. At the same time large warehousing accommodation was provided with an aggregate floor area of over 900000 sq. feet at Kantapukur in close proximity to the steamer berths for the benefit of export trade in wheat and seeds. At Hide Road large godowns were constructed for the use of the important hide and skin trade, a Riverside transit shed and a large tea warehouse was erected on the Riverbank immediately south of the docks. Out of 18 general berths, 10 were used for coal, special accommodation was for wheat and seed, hide, skin and tea were reserved leaving very little space for import. But the rise of import of Java sugar and Burma rice demanded more berths, thereby a process of continuous expansion, improvement and innovation had been associated with the Kidderpore Dock. Hence the Calcutta port evolved into a new structural identity within the colonial framework.

**Post Independence Scenario**

**a. Diversion of River**

D.M. McDowell, who served as Chief Hydraulic Engineer of the Port Trust and was later Prof. Emeritus of Hydrology in Manchester has shown in detail that the Bhagirathi, as a distributary of the River Ganges, got entangled with what is known as the Nadia River system - the Mathabhanga and the Jalangi, lower distributaries, all of which had tied up together and gone in for River capture in a big way, as happens in estuaries and deltas. This River capture between Murshidabad and Ranaghat has meant that the flow of the Ganga is depleting and has led to the Bhagirathi itself being a very narrow river.

**b. Sickness of Industries in West Bengal**

Apart from the siltation of the River, one of the big blows to Kolkata as a port, (formation of Haldia port) was the blow given by the second Partition of Bengal. Whatever happened to the jute industry, at any rate, it shifted towards Narayangunj for several years. The salt trade of the River was felled by a shift in the policy of transportation according to which, it moved from River to rail, so that rail transportation took the River's place for the big movements of salt. The anchorages of the Strand Bank jetties disappeared after the first half of the twentieth century. The active port moved South in the second half of the twentieth century. There was a complete disruption of the Rangoon – Kolkata Port links

(mainly rice trade) during the Second World War. In general, there was obsolescence in the traditional industries of Bengal.

**c. History of Siltation**

In 1986, nine years after Haldia port was commissioned, the shortest channel to Kolkata dock called the Balari channel that goes past Haldia dock got blocked by shoaling. This channel was west of Nayachar island and Balari bar. Ships bound for Kolkata dock now take the channel east of Nayachar and Balari bar.

Several measures were planned to open up the Balari channel but were left half-done. This has largely contributed to the situation today. Measures included a guide wall at the northern tip of Nayachar and a deflecting spur a little upstream on the channel. Deflecting spurs are constructed transverse to the River flow and projected from the bank into the River to deflect the current towards the opposite bank. The idea was that water would hit the spur and move through the northern guide wall into the Balari channel, thereby building enough momentum to wash away the silt towards the sea, aided by dredging. The guide wall was built in 1986 but the spur is yet to come up. Consequently, there has been heavy shoaling at the guide wall and the northern tip of Nayachar has nearly merged with the southern tip of Balari bar.

Another guide wall was to come up at the southern tip of Nayachar to prevent it from extending further into the channel. That did not materialize. Now Nayachar's southern tip is growing towards a smaller land bar called Mizzen Sands, nearly blocking the channel between the two land bars through which ships make their way to Haldia. In a meeting of the port's technical advisory committee in April this year, the Kolkata Port Trust's chief hydraulic engineer said the Haldia-Balari region was "heading towards an irreversible morphological change".

The authorities are well aware that dredging just to keep a channel open at its present depth is not the answer to the Hooghly's navigability problems. More so since the dredgers dump the silt a mere 5 km from the dredging site and incoming tides push about 20% of the material back in. Every year, the port dredges 22 million square metre of silt. According to geologists, for dumping the silt ashore, at least 440 hectares land are required. The port trust was looking for land around Nandigram but since acquiring land is difficult, shore dumping seems a remote possibility. Many places e.g. blind point - poses a challenge to pilots of all vessels passing through the region as it witnesses very strong currents. Moreover, due to

heavy deposits of silt over the years, the western channel of the Hooghly here has become unfit for navigation - leaving just the eastern channel open for ship movement.

In 2003-04, the port trust revived its River regulatory scheme to reopen the Balari channel by cutting through the riverbed. In March this year, the Planning Commission cleared the scheme. The cost has increased from less than Rs 100 crore in 1986 to between Rs 900 crore and Rs 1,000 crore today. But there's more red tape involved. The scheme now requires a revalidation study by the National Institute of Ocean Technology in Chennai, and a clearance by the Public Investment Board. It could take two more years by which time yet another study will be required because the shoaling would have increased.

**d. Inadequate dredging**

The Haldia Dock Complex and the Kolkata Dock System further upstream are managed by the Kolkata Port Trust that comes under the Union Shipping Ministry. Haldia dock, also called Haldia port, handles 80% of the cargo managed by the port trust. Both docks need regular dredging to maintain navigable depth since huge volumes of silt from upstream get deposited at the mouth of the River. Dredging Corporation of India (DCI), a public-sector unit based in Visakhapatnam that also reports to the shipping ministry, carries out almost all the dredging in Indian ports. In April 2002, the Haldia Dock Complex entered into a contract with DCI to maintain minimum depths of 5 m and 5.5 m at Jellingham and Auckland at an annual cost of Rs 300 crore. As part of the contract, DCI was to provide five dredgers. In case the five were not able to do the job, an additional dredger was to be provided for 120 days in a year, subject to availability. Since April 2008, two of the five dredgers meant for Haldia had been sitting at the Visakhapatnam shipyard for repairs. Another was being fixed at the port itself. Of the remaining two dredgers, one had only one of its two suction tubes working. DCI has a fleet of 12 dredgers, several of which are over 30 years old and which, shipping ministry officials admit, need constant repair.

It is alleged that despite repeated reminders DCI could not send additional dredgers because seven of its best dredgers have been deployed at the controversial Sethusamudram project site in Tamil Nadu. DCI leases dredgers when required. But it was difficult to find good dredgers to lease because most of them were in Dubai, working on the Palm Islands, the largest artificial islands. After breaking the news to the media and letters to the prime minister and state leaders, the shipping ministry in early November moved several dredgers to Haldia from Paradip and Visakhapatnam, and one from the Sethusamudram site. Six dredgers are already at the port, of which five are working. Another is expected to reach soon. Two more chartered dredgers are on their way to the port. Haldia would maintain a depth of 4 m till

December using additional dredgers. Port technical officials, however, said that given the silt buildup, at least 10 dredgers should be put to work immediately at the Auckland and Jellingham bars, just to keep the port alive.

The ideal navigable depths at these two locations, named after sandbars Jellingham and Auckland, are 6.1 metres and 6.3 m respectively at zero tide, the average low-tide height there. In October, a Kolkata Port Trust survey found that the depths at the two locations had decreased to 3.9 m and 4.3 m respectively. With this the approach to the port from the south is in danger of getting blocked. The approach from the north was blocked in 1986 due to the formation of sandbars or shoaling. It's functioning somehow on the skills of river pilots who know the sand bar formations and navigate ships through the channels. "A disaster is waiting to happen," said Ramakant Burman, the secretary of the Haldia Dock Officers' Forum. Burman informed the crisis after he came across a letter, dated July 23, from the director of the Port's Marine Department to the chairman of the DCI. The letter said the dock faced "total closure" unless more dredgers were sent immediately.

**e. Changes in Cargo**

There was the transformation of cargo boats to flatter, broader bottoms to permit containerization. This precluded up river navigation and called for broader estuarine ports. As a result of this, and along with a general attack on Kolkata in terms of the historical developments, there was a particular sort of shift from Kolkata.

**Effect on Trade**

Power companies, steel and chemical plants and refineries are spending about Rs 1,050 crore annually to divert their cargo via Paradip and Visakhapatnam ports. Companies whose trade is affected are Haldia Petrochemicals, Indian Oil Corporation, Mitsubishi, Tata Steel and sail. Diverting cargo is costing Haldia Petrochemicals alone Rs 80 crore a year. If the port shuts down, these industries will be at risk. It will affect trade and commerce in the region, including the northeast, Nepal and Bhutan. Nepal and Bhutan, two major buyers of Kolkata port service, are shifting their choice to Chittagong and Mongla port of Bangladesh to handle cargo of their third country trade. Nepal used the Kolkata port for 2 million tonnes of export-import while Bhutan’s annual traffic through the port was half a million tonnes. The crisis has been building up over several years because Kolkata port is congested and DCI's failure to

deploy enough dredgers and the Union government's delay in clearing the River Regulatory Scheme meant to improve the navigability of the river. This will definitely influence earning of many handling agents and others involved in auxiliary or allied services on surface or rail transport of cargo to Nepal and Bhutan through Indian surface corridors.

In August, 2008 the port trust reduced the width of the five-track shipping channel by dropping the silted track, or navigational lane, nearest Haldia. It also reduced the under keel clearance requirement (the gap between the bottom of the ship and the Riverbed/ seabed) for Haldia-bound vessels to 1.1 m from 1.25 m. In reality, they increased the risk of vessels running aground.

**Conclusion**

KoPT (Kolkata Port Trust) has introduced various customer friendly measures like licensing scheme for cargo in place of demurrage, reduction of various Port charges, inventing new business opportunities and encouraged Port based industries. Liaison with various authorities to redress the grievances of Port users especially importers and exporters is being done at higher levels. KoPT is very much willing lo help Small Scale Industries to set up their establishments near the Port area in mutual interest of growth. KoPT's image is changing in the recent times and there is customer friendly atmosphere at the Port. The Port has already achieved 2nd position (2005-'06) amongst Indian Major Ports. In the fiscal year 2011-12, Kolkata port handled 43.248 million metric tons ($47.673\times10^6$ short tons) of cargo. This is significantly less than 53.143 million metric tons (58.580 million short tons) of cargo it handled in 2005-06. However, the number of vessels handled at Kolkata Port during 2011-2012 was the highest amongst all Indian Major Ports. KoPT handled 16% of the total number of vessels, which worked at Indian Major Ports in 2011-2012. During the fiscal year 2011-2012, 3183 vessels called at KoPT and it is working hard to become number one at the earliest.

The Shore based Syledis Position Fixing System functions round the clock with the help of the Syledis Stations located at Haldia, Raichak, Dadanpatra Bar and Frazergunj. The system is effectively utilized for the purpose of hydrographic survey and dredging.

KoPT is replacing Syledis Position Fixing system by Differential Global Position Fixing System in phases. This latest state-of the art technology will provide improved location accuracy up to 10 centimetres.

Kolkata is a set of anchorages which have moved southwards. The port is shifting itself towards Haldia and in an attempt to avoid the bends, bores and bars of the River, the shift will finally take place according to projections, to Diamond Harbour and even further southwards towards Sagar. These are all anchorages of a relatively new River course in a process of change and decay. The development of Haldia as a sea port has made it easier to focus on the renovation of work in the Kolkata Dockland, on up river traffic into the city and to rail and road terminals taking goods further inland.

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