Port Infrastructure - Synthesis and Significance

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Abstract: *Port Infrastructure is one of the important factors determining the growth of external sector of a country. Sea route is a well accepted mode of transport for external trade and it is comfortable for the export and import of large volume of cargo. Air route is not comfortable for the export of bulk cargo and it is very costly and expensive even for the export of small items. So ports are essential for the export and import of commodities and capital goods. Export units are to be established nearby ports. It will reduce transport charges incurred from factory to port. In this paper, a modest attempt has been made to study the India's External Trade Flows, Cargo Handled at Major Ports, Commodity-wise cargo Traffic and Sagarmala Projects.*

Key Words: *Port Infrastructure, External Trade, Capital Goods, Inland Transport*

1. INTRODUCTION:

There are 12 major and 200 notified minor and intermediate ports in India. Cargo traffic which recorded 1,052 Million Metric Tonnes (MMT) in 2015 is expected to reach 1,758 MMT by 2017. The Indian ports and shipping industry plays a vital role in sustaining growth in the country's trade and commerce. India is the sixteenth largest maritime country in the world, with a coastline of about 7,517 km. The Indian Government plays an important role in supporting the ports sector. It has allowed Foreign Direct Investment (FDI) of up to 100 per cent under the automatic route for port and harbour construction and maintenance projects. It has also facilitated a 10-year tax holiday to enterprises that develop, maintain and operate ports, inland waterways and inland ports.[1]

A major port is defined as "any port with two or more berths and facilitates and equipment capable of discharging 100000 tons of cargo per month from ocean-going ships." There are 12 major ports in India and a large number of minor ports. The external trade of India is an increasing trend. The following table reveals external trade of Government of India from 2008-09 to 2015-16.

Table 1
India's External Trade Flows (USD billion)

Year	Export	Import	Total
2008-09	185	304	489
2009-10	179	288	467
2010-11	250	370	620
2011-12	306	489	795
2012-13	300	491	791
2013-14	314	450	764
2014-15	310	448	758
2015-16	262	381	643

Source: Ministry of Commerce, TechSci Research

The table 1 shows that export of India was US$ 185 billion in 2008-09 and it is increased to US$ 310 billion in 2014-15 and decreased to US$ 262 in 2015-16. The percentage increase of exports is 41 per cent for the period 2008-09 to 2015-16. Similarly the import is increased from US$304 in 2008-09 to US$ 381 in 2015-16 showing the percentage increase of 25 per cent. Total external trade is increased from US$489 to US$643 during this period recording the percentage increase of 31percent. Ninety five per cent of external trade is performed (Loading and down loading) by ports. Growth of Port infrastructure becomes an essential element to meet the growth of external trade. The infrastructure facilitates are to be increased in proportion to increase in external trade. It will reduce the cost of logistics operation to external sector and cost of logistic will become competitive to ease the operations of exports and imports. The report on Export Infrastructure in India, 2016 shows that deficient infrastructure and the manner in which infrastructure are being operated are the major obstacles to ensure competitiveness on manufacturing of goods and

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[1] https://www.ibef.org/industry/ports-india-shipping.aspx- accessed on 07/09/2017

export thereof. Indian exports lose competitiveness an account of huge logistics cost. The logistic cost in India is about 14 per cent of GDP whereas in advanced economics like US and European Union, it is 8 per cent and 10 per cent of GDP respectively. The study conducted by ASSOCHAM, "Resurgent India" reveals that "India can save up to US$ 50 billion if logistics cost are brought down from 14 per cent to 9 per cent of GDP thereby making domestic goods more competitive in the global market." It urges the need   for increasing efficiency of ports in cargo handling, port infrastructure and reducing logistics cost. The cargo handled by major ports of India is given in Table 2.

Table 2
Cargo Handled at Major Ports

(Million Tonns)

Ports	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Kolkata	43.24	39.92	41.38	46.29	50.28	50.31
Paradip	54.25	56.55	68.00	71.01	76.39	88.95
Vizag	67.42	59.03	58.50	58.00	57.03	61.02
Kamarajar	14.95	17.88	27.33	30.25	32.2	30.02
Chennai	55.70	53.40	51.10	52.54	50.05	50.21
Chidambaram	28.10	28.26	28.64	32.41	36.84	38.46
Coachin	20.09	19.84	20.88	21.59	22.09	25.00
New Manglore	32.94	37.03	39.36	36.56	35.59	39.94
Mormugao	39.04	17.73	11.73	14.71	20.78	33.18
Mumbai	56.18	58.03	59.18	61.66	61.11	63.05
JNPT	65.73	64.48	62.33	63.80	64.02	62.02
Kandla	82.50	93.61	87.00	92.49	100.05	105.44
Total	560.187	545.83	555.48	581.34	606.43	647.6

Source: Indian Port Association

Table 2 reveals that the major ports handled 560.19 million tonnes of cargo in 2011-12 and it is increased to 647.63 million tonnes in 2016-17, Kandla stands first in volume of cargo handling followed by Paradip, Mumbai, JNPT, and Visakhapatnam. In the year 2016-17, Kandla handled 16.28 per cent of total cargo handled by major ports in India. India depends on other countries for petroleum products. Eighty five percentage of domestic requirement of petroleum is imported from foreign countries. So petroleum products occupy a major share of total cargo handled by major ports. The following table 3 shows commodity-wise Cargo Traffic at Major Ports.

Table 3
Commodity-wise Cargo Traffic

In Million Tonnes

Year	POL	Iron Ore	F& RM	Coal	Container	Other Cargo	Total
2011-12	179.1	60.4	20.39	78.78	120.1	101.36	560.14
2012-13	185.98	28.47	14.74	86.66	119.82	110.12	545.79
2013-14	187.31	24.66	13.74	104.73	114.64	110.42	555.5
2014-15	188.77	17.91	16.2	117.86	119.44	121.16	581.34
2015-16	195.4	15.35	15.9	125.96	123.12	130.2	606.47

Source: Ministry of Shipping

It is seen in table 3 that petroleum products handled by major ports is in increasing trend from 179.10 million tonnes in 2011-12 to 195.94 million tonnes in 2015-16, similarly coal from 78.78 million tonnes to 125.96 million tonnes. The import of petroleum products and coal is on increasing trend, 1.8 percent increase for petroleum products, 9.8 percent increase in coal during 2011-12 to 2015-16. Iron ore is in decreasing trend, 60.40 million tonnes in 2011-12 to 15.35 million tonnes in 2015-16. Container cargo is more or less constant, 120.10 million TEUs in 2015-16. In the year 2015-16, total cargo handled by major ports is 606.47million tonnes. In it, the share of petroleum products is 32.98 per cent, iron ore 2.53 per cent, fertilizer 2.62 per cent, coal 20.76 per cent, container 20.30 per cent, and other cargo 21.46 per cent.

The report of Union Ministry of Shipping 2016-17 reveals that capacity at major ports is 965.36 million tonnes in 2015-16, whereas traffic handled is 606.47 million tonnes. The capacity utilization is 62.82 percent. Similarly the capacity utilization in 2011-12 is 81.19 per cent, 2012-13 is 73.25 per cent, 2013-14 is 69.39 per cent

and 2014-15 is 66.70 per cent. When the actual traffic handled is less than the capacity, it reduces congestion in ports. It is inferred that congestion increases operation cost in ports. The chance for congestion is minimum in major ports. It is a time to study the ways and means to utilise the existing port infrastructure efficiently to reduce logistic operations and costs. The cost of logistics from production centre to ports is to be reduced to make logistics operations competitive.

Voyage productivity, container dwell time, reefer dwell time, containers traffic, truck visit time, number of gate moves, vessel turnaround time are important performance indicators of ports. These indicators measure efficiency of a port. The report of Union Ministry of Shipping 2016 reveals that the average turnaround time (days) for major ports in India was 4.56 in 2012, 8.29 in 2013, 3.84 in 2014, 4.01 in 2015 and it is reduced to 2.04 in 2016. Average pre berthing detention days is also reduced from 2.05 in 2012 to 1.61 in 2015. Output per ship berth day is increased from 105.75 tonnes in 2012 to 12993 tonnes in 2015 and 13156 tonnes in 2016.

The Central Government has introduced Sagarmala Project for strengthening port infrastructure and economic development of coastal areas. The objectives of Sagarmala Project are to transform the existing ports into modern world class ports, integrate development of the ports, industrial clusters, hinterland and efficient evacuation systems through road, rail, inland and coastal waterways resulting in ports becoming the drives of economic activity in coastal areas. Port modernisation, connectivity enhancement, port linked industrialisation, and coastal community development are important activities of the Sagarmala Project. It is proposed to spend Rs.43, 985 crore in 2015-15, Rs.55,123 crore in 2016-17, Rs.23,953 crore in 2017-18, Rs.2,70341 crore in 2018-19 Rs. 700 crore in 2019-20 to 2024-25 and Rs.36,398 crore in 2025-26 to 2034-35 and total project cost of this project from 2015-16 to 2034 is Rs.7,98,500 crore. The details of Sagarmala Project is given in table 5

Table 4
Projects under Sagarmala

(Rs.cr)

S. No	Project Theme	15-16		16-17		17-18		18-19		19-20 to 24-25		25-26 to 34-35		Total	
		#	Project Cost	#	Project Cost	#	Project Cost	#	Project Cost	#	Project Cost	#	Project Cost	#	Project Cost
1	Port Modernisation	62	27700	46	22670	13	2193	20	35512	27	26588	21	28165	189	142828
2	Connectivity Enhancement	30	15881	58	28924	28	16641	26	139715	17	21182	11	8233	170	230576
3	Port linked Industrialisation	2	325	1	3000	2	5000	17	94426	11	318130	-	-	33	420881
4	Coastal Community Development	4	79	4	529	3	119	4	688	8	2800	-	-	23	4216
	Total	**98**	**43985**	**109**	**55123**	**46**	**23953**	**67**	**270341**	**63**	**368700**	**32**	**36398**	**415**	**798501**

Source: Ministry of Shipping, Govt of India.

The Union Ministry of Commerce and Industry in the month of March, 2017 introduced Trade Infrastructure for Export Scheme (TIES) to enhance export competitiveness by bridging gap in export infrastructure, creating focussed export infrastructure, first mile and last mile connectivity for export-oriented projects and addressing quality and certification measures. The central and state agencies including Export Promotion Councils, Commodity Boards, SEZ Authorities and Apex Trade Bodies recognized under the EXIM Policy of Government of India are eligible for financial support under this scheme. This financial support will be 50 per cent of the total equity of project, (80 per cent for North Eastern States and Himalayan States including J&K), subject to ceiling of Rs.20 crore for each infrastructure project. Under this scheme the Central Government has approved the proposal of establishing integrated cargo terminal at Imphal International Airport at a cost of Rs.16.2 crore. In it the share of TIES is Rs.12.96 crore. The proposal for establishing a Coastal Cashew Research and Development Foundation in Karnataka at a cost of Rs.10 crore is approved under this scheme.
Modernisation of infrastructure facility in Karnataka for marine export at a cost of Rs.13.34 crore and construction of a new Standard Design Factory building at Cochin SEZ at a cost of Rs.61.63 crore are also approved under TIES.

2. CONCLUSION:
Hinterland connectivity to ports is the most important factor to be considered for creating and developing export infrastructure. Export led enterprises should be established nearby ports. It will reduce logistics cost. The freight cost depends upon distance, type and value of goods, competition, economics of scale, port and infrastructure characteristics. Shanghai of China, Singapore and Shenghen of China are world leading container ports. In these ports

vessels turnaround time is in hours. But Indian ports it is days. Hinterland connectivity and developments, mother vessel availabilities, technological advancement in documentation, modern container handling equipments and logistic infrastructure development and advancement are the important factors determining performance of ports and reducing logistics costs in the global external sector.

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