SEAPORTS, DRY PORTS, DEVELOPMENT CORRIDORS:
Implications for Regional Development in Globalizing India

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& Gloria Kuzur

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SEAPORTS, DRY PORTS, DEVELOPMENT CORRIDORS: Implications for Regional Development in Globalising India

Atiya Habeeb Kidwai[*] *& Gloria Kuzur*[**]

[**Abstract:** *The seaport and dry port systems in India are being restructured in response to the structural adjustment reforms adopted in 1991 which aimed at liberalisation/globalisation/ privatisation of the country's economy. The catalysts have been three national level infrastructure and regional development programmes linked to post-reform growth strategies. These programmes are: i) construction of national highways to connect the four corners of the country; ii) make a garland of new seaports on the triangular peninsular coasts; and, iii) create corridors for industrial development and efficient freight movement. These programmes have created a non-path dependent trajectory in India's port sector wherein old ports are losing their significance and a new locational matrix of sea and dry ports is being created linked to seaport oriented transport/freight corridors. We highlight in this paper the emerging significance of newer and non-major ports and the consequent changes in the port system, both hierarchical and regional. The relevance of port focused development corridor projects, which are part of the privileged regional development strategy in India, is evaluated and the growing significance of dry ports in the logistic chain of freight movement and their linkages with local economies is assessed.*]

Keywords: *Indian sea port system, port linked development corridors, dry ports and local industrial development.*

Introduction

Since the 1990s the colonial path dependent port system of India is being restructured in response to the contingencies of the structural adjustment reforms adopted in 1991. This steered in an era of liberalisation/globalisation/privatisation of the country's economy. Three important national level infrastructure and regional development programmes were adopted, which have been the catalysts in regional and port sector restructuring.

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The first, the National Highway Development Programme (2001) was initiated to develop two sets of highways: i) the Golden Quadrilateral Highway System to traverse the east and west coasts of India and converge in the north at the capital city of Delhi, thereby forming a quadrilateral; and, ii) the North-South, East-West transport Corridors to connect the four cardinal points of the country. The second project called 'Sagarmala' (2003), literally meaning 'ocean garland,' intended to make a 'garland' of public and private seaports along India's coastline. This project was eventually replaced by the National Maritime Development Programme (2005) to upgrade and modernise the port infrastructure and port-rail-road connectivity. The third initiative, the Corridor Development Programme (2005) focused on creating port linked axes for industrial development and efficient freight movement.

These programmes are creating a new locational matrix for urbanisation and industrial and service sector development in the country. Within this matrix, while some of the existing sea and dry ports are losing importance, some new ones are also emerging. This has significant implications for the geography of development in the country and for the resultant map of growing and lagging regions.

In this paper we attempt to highlight the following three trajectories of port related regional development processes in globalising India:

- The emerging role of newer and non-major ports in trade and hinterland development and the consequent changes in the port system, both hierarchical and regional. The analysis is done at the macro all-India level.
- The relevance of port focused development corridor projects which are a privileged component of the regional development strategy in India today. The Delhi-Mumbai axis will be taken as a meso level case study.
- The growing significance of dry ports in the logistic chain of freight movement and their linkages with local economies. The analysis will be at the micro level of dry port clusters.
- Policy related issues emerging from the analysis will be highlighted as conclusion.

India has 12 major ports; six each along its west and east coasts and about 200 non-major ports including working, non-working and captive ports[1] (see *Figure 1*). All the major ports are seaports except in Kolkata, which is a river port. Out of the 200 non-major ports, only about 48 perform either seaport functions or are river ports, harbours, marinas, off-shore terminals, piers, jetties or wharfs. The rest are merely fishing harbours[2]. The

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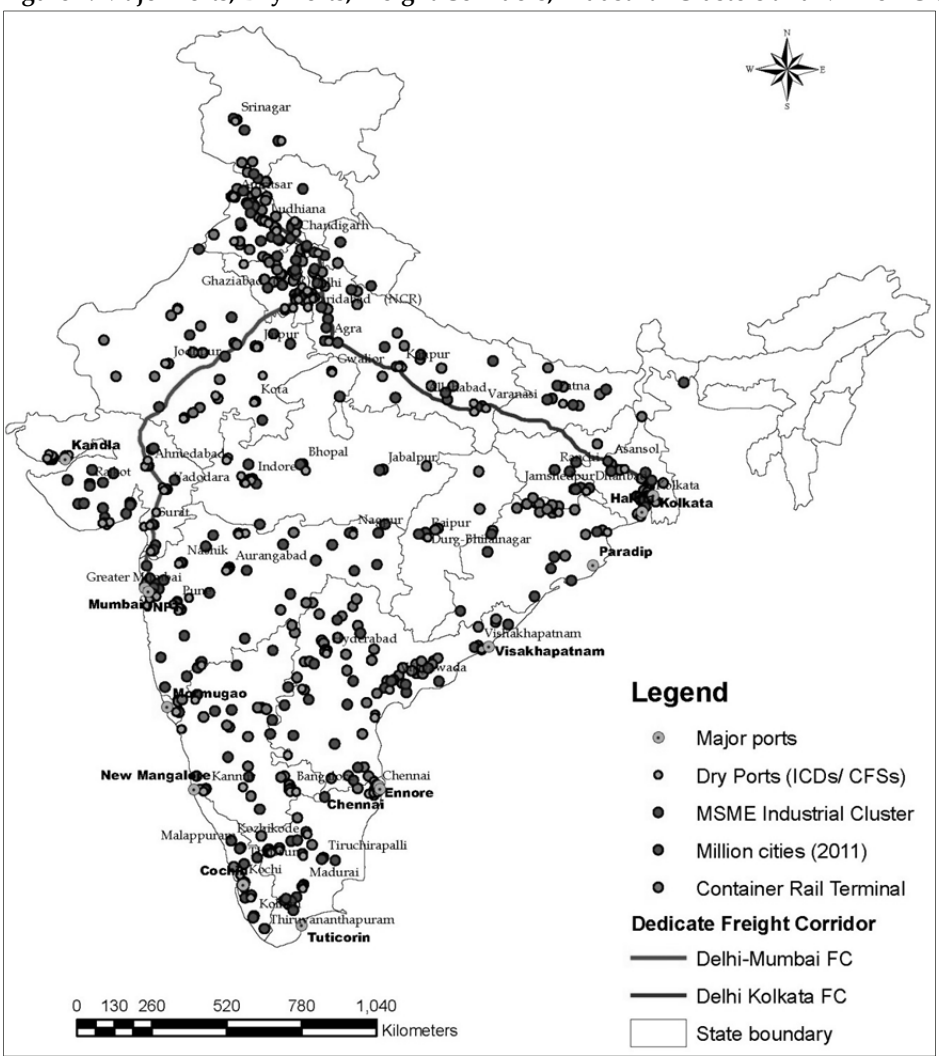
[1] The major ports as designated by the Government of India are Chennai, Kochi, Ennore (corporate), Jawaharlal Nehru Port (JNPT), Kolkata (including Haldia), Kandla, Mormugao, Mumbai, New Mangalore, Paradip, Tuticorin and Visakhapatnam), Ministry of Shipping, Road Transport & Highways (2011), Government of India.

[2] Deloitte (2012), 'National Conference on Container Infrastructure in India,' Background Paper 3. Available at: http://3six5ive.net/dogfen/national-conference-on-container-infrastructure-in-india-188833/

principle commodities handled at both the major and non-major ports are petroleum and petroleum products, iron-ore, coal, fertilizer, break-bulk cargo and containers. In 2013 the major ports had handled 744.91 million tonnes of cargo[3].

Figure 1: Major Ports, Dry Ports, Freight Corridors, Industrial Clusters and Million Cities 2011



Source: 1. Ministry of Shipping, Road Transport & Highways, Government of India.
2. Ministry of Commerce, Government of India, www.commerce.nic.in,
3. http://www.clusterobservatory.in/ 4. Census of India, 2011. 5. www.corcorindia.com

Dry ports in India are known as Inland Container Depots (ICDs) and Container Freight Stations (CFSs). They are owned both by the public and the private bodies. In 2011, there were about 247 dry ports in the country, out of which 173 were functional and 74 were

[3] Ministry of Shipping, Road Transport & Highways (2013), Government of India.

under implementation (see *Figure 1*). Container Corporation of India Ltd (CONCOR), a Government of India undertaking working under the aegis of the Ministry of Railways, owned 34 ICDs, private investors 153 and other bodies owned 60. By February 2014 the number of CONCOR dry ports had increased to 63 and the overall list of ICDs rose to 282[4]. The preferred mode of transportation of container traffic is primarily by road.

However, there are about 186 container rail terminals in the country[5]. The modal share of inland container movement of major ports in 2011–12 was 90 *per cent* (TEUs) by road and 10 *per cent* (TEUs) by rail[6].

The new manufacturing policy in India is envisaged to catalyse manufacturing growth from 16 *per cent* to 25 *per cent* of its GDP and create 100 million new jobs[7]. To achieve this, 'Corridors of Growth' with direct linkages with seaports are to be created to develop 16 smart, sustainable industrial cities which are expected to transform India into a global manufacturing hub[8]. Four 'Dedicated Freight/Industrial Corridors,' linking inland development regions with seaports, have been planned to achieve this aim. These are, i) Delhi-Mumbai Industrial Corridor (DMIC) in western India from JNPT near Mumbai to Tughlakhabad and Dadri in Delhi (1534 kms); ii) Amritsar-Kolkata Industrial Development Corridor in eastern India from Ludhiana in Punjab to Dankuni near Kolkata (1839 kms); iii) Bengaluru-Mumbai Economic Corridor; and, iv) Chennai-Bengaluru Industrial Corridor.

1. The Indian Port System: Moving Away from Path Dependency

1.1 The pre-reform period (1950 to 1990)

There has been a marked change in the port system in India, both hierarchical and spatial during the last century. In India, three major gateway port cities (Calcutta, Mumbai, and Madras) had been set up as the Presidency capitals during the British period to colonize and control the hinterlands. These ports continued to maintain their supremacy in the port hierarchy in the post-independence but pre-reform period (see Table 1). The ports of Bombay (now Mumbai) on the west coast, and Calcutta (now Kolkata) and its ancillary port of Haldia on the east coast shared the first and the second ranks respectively in terms of cargo handled. Madras (now Chennai) and Visakhapatnam fluctuated between the third and the fourth ranks. The decline of Calcutta in the 1960s, which was earlier at the second rank, was partly caused by physical constraints and partly by the opening of

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4 Container Corporation of India, http://www.concorindia.com/

5 *Ibid*.

6 Ministry of Shipping, Road Transport & Highways (2012), Government of India.

7 Department of Industrial Policy and Promotion (2014), Annual Report 2014-15 'Make in India,' Ministry of Commerce and Industry, Government of India.

8 *Ibid*.

the alternative ports of Paradip, Haldia and Visakhapatnam. The intermediate ports experienced significant fluctuations in their ranks.

1.2 Changes in the post-reform period

In the post-reform period, post 1991, the old and traditional ports of Mumbai, Kolkata (including Haldia), Chennai and Cochin gradually lost their ranks in terms of general cargo handled (see *Table 1*). Kolkata port today has the lowest share. The port of Mormugao, which had emerged as the second most dominant port after Mumbai in the 1970s and the 1980s, has gradually declined in its share in the post-reform period.

Table 1: Total General Cargo Handled, Percentage Share and Ranks of Major Ports in India

Major Ports	*Total 1960–61 (million tonnes)*	*% share 1960–61*	*Rank 1960–61*	*Total 1990–91 (million tonnes)*	*% share 1990–91*	*Rank 1990–91*	*Total 2000–01 (million tonnes)*	*% share 2000–01*	*Rank 2000–01*	*Total 2011–12 (million tones*	*% share 2011–12*	*Rank 11–12*
Mumbai	14.35	43.33	1	28.9	19.05	1	27.06	9.63	5	56.186	10.03	4
Kolkata/Haldia*	9.39	28.35	2	14.95	9.86	5	30	10.67	4	-		
Chennai	3.04	9.18	3	24.52	16.17	2	41.22	14.66	2	55.707	9.94	5
Visakhapatnam	2.76	8.33	4	19.42	12.80	4	44.69	15.90	1	67.42	12.04	2
Cochin	2.01	6.07	5	7.28	4.80	8	13.14	4.67	10	20.09	3.59	11
Kandla	1.57	4.74	6	19.69	12.98	3	36.74	13.07	3	82.501	14.73	1
Ennore	-			-			-			14.956	2.67	12
Haldia	-			-			-			31.015	5.54	9
JNPT	-			2.02	1.33	11	18.58	6.61	8	65.73	11.73	3
Kolkata	-			-			-			12.233	2.18	13
Mormugao	-			14.91	9.83	6	19.63	6.98	7	39.049	6.97	7
New Mangalore	-			8.02	5.29	7	17.89	6.36	9	32.941	5.88	8
Paradip	-			6.88	4.54	9	19.9	7.08	6	54.254	9.68	6
Tuticorin	-			5.08	3.35	10	12.28	4.37	11	28.105	5.02	10
Total	33.12	100		151.67	100		281.13	100		560.187	100	

Note: * Combined data for Kolkata and Haldia.

Source: Ministry of Shipping, Road Transport & Highways, Government of India.

The newer ports, on the other side, have gained significantly in their ranks in terms of cargo handled. The Jawaharlal Nehru Port Trust (JNPT), also known as Nhava Sheva, created to relieve pressure on Mumbai and in operation from 1989 became the second most important container port after Mumbai in 1992–93 with a share of 43 *per cent* of the total container cargo. In 2000–01 it emerged as the premier container port in the country and has since retained that position. In terms of general cargo also JNPT it is the third most important port. The newer port which has improved its rank is Paradip. However, the ports of New Mangalore, Tuticorin and Haldia have recorded average or insignificant changes in rank (see *Table 1*). The top ranked four ports, Kandla, JNPT, Visakapatnam and Mumbai handled 50.42 *per cent* of the total general cargo in 2012–13.

The total volume and relative shares of major ports in container traffic have fluctuated significantly after the economic reforms, thereby, changing the rank hierarchy of these ports (see *Table 2*). The old gateway port of Mumbai, which was the premier container traffic handling port in the pre-reform period and had handled about 43 *per cent* of the containerized traffic in 1991–92, declined to the tenth rank in 2011–12 with only 0.46 share in the total container cargo. Its position was taken over by the adjoining JNPT port specially built to handle containerized traffic. JNPT is now the new hub port of India and in 2011-12 handled about 48 *per cent* of its containerized cargo.

Table 2: Total Container Cargo Handled, Percentage Share and Ranks of Major Ports in India

Major Ports	*Total 92–93* (million tonnes)*	*% share 92–93*	*Rank 92–93*	*Total 2000–01 (million tonnes)*	*% share 2000–01*	*Rank 2000–01*	*Total 2010–11** (million tonnes)*	*% share 2010–11*	*Rank 2010–11*	*Total 2011–12** (million tones*	*% share 2011–12*	*Rank 11–12*
Mumbai	3.86	43.07	1	4.36	13.54	3	0.65	0.57	9	0.55	0.46	10
JNPT	1.71	19.06	2	14.27	44.31	1	56.42	49.43	1	58.23	48.42	1
Chennai	1.25	13.94	3	5.76	17.90	2	29.42	25.77	2	30.07	25.01	2
Calcutta				2.01	6.24	4	6.22	5.45	4	6.81	5.67	4
Haldia	1.10	12.29	4	0.80	2.50	8	2.83	2.48	6	2.61	2.18	8
Kandla	0.35	3.98	5	1.28	3.99	7	2.58	2.27	7	2.79	2.32	7
Cochin	0.30	3.44	6	1.79	5.56	5	4.41	3.87	5	4.71	3.92	5
Tuticorin	0.27	3.08	7	1.57	4.87	6	8.16	7.16	3	9.22	7.67	3
Visakhapatnam	0.08	0.95	8	0.27	0.86	9	2.57	2.25	8	4.21	3.50	6
New Mangalore	0.013	0.14	9	0.02	0.06	11	0.56	0.50	10	0.64	0.54	9
Mormugao	0.005	0.06	10	0.04	0.14	10	0.22	0.19	11	0.27	0.23	11
Paradip		0.00		0.007	0.02	12	0.06	0.06	12	0.10	0.09	12
Total	8.98	100	8984	32.22	100		114.15	100		120.27	100	

Note: *Basic Ports Statistics of India, 1992-93, IIPM. ** Ministry of Shipping, Road Transport & Highways, Government of India.

Source: http://www.ipa.nic.in/

When we consider the long-term loss or gain of rank in the port hierarchy of major ports in terms of general and container cargo handled (*Table 3*), we find that most of the older ports have lost their respective ranks whereas the newer ports have moved upwards.

1.3 Emerging role of non-major ports

There has been a gradual shift of traffic from the major to the non-major ports in the post-reform period. The increase in the percentage shares of non-major ports can be seen in *Figure 2*. In the pre-reform period it had increased eight times in about four decades from 4.41 million tonnes in 1960–61 to 36.31 million tonnes in 1998–99. By 2012–13, however, it increased 11 times to 388.23 million tonnes in only 14 years. The most important non-major ports handling overseas cargo traffic on the western coast are Sikka and Mundra

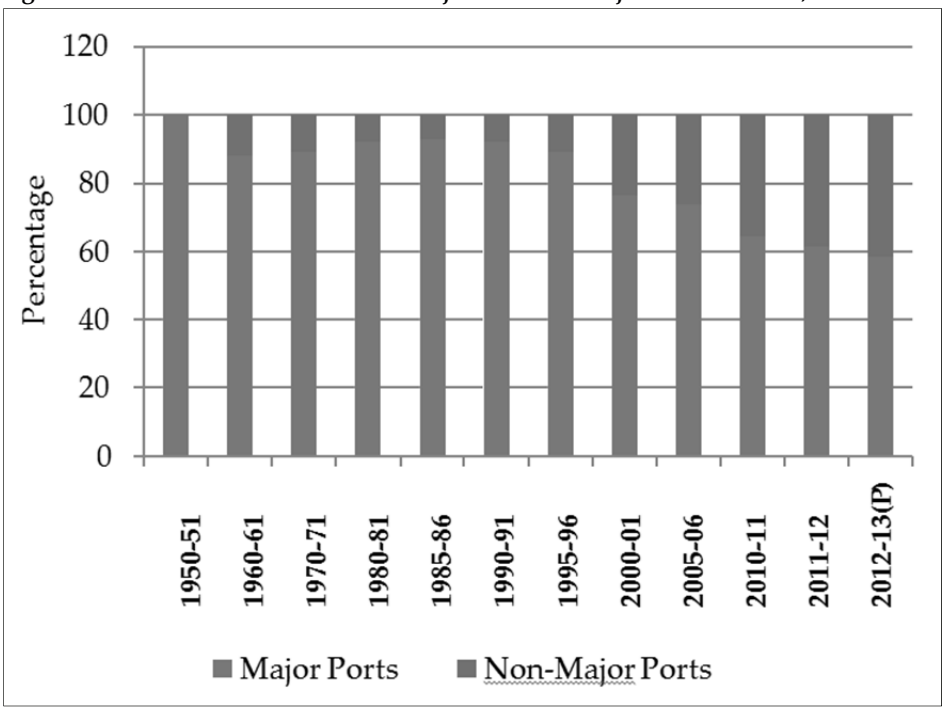
(GAPL) in Gujarat, and Krishnapatnam, Gangavaram and Kakinada Deep Water Port on the eastern coast in Andhra Pradesh (see *Figure 3*).

Table 3: Long-term Changes in Port Hierarchies (1960–2012) in India

Major ports	*Hierarchical Movement according to General Cargo Traffic Handled (1960–61 to 2012–13)*			*Hierarchical Movement according to Container Cargo Traffic Handled (1992–93 and 2011–12)*		
	Upward	*Downward*	*No change*	*Upward*	*Downward*	*No change*
Older Port						
Mumbai		*			*	
Kolkata/ Haldia		*			*	
Chennai		*		*		
Visakhapatnam	*			*		
Cochin		*		*		
Kandla	*				*	
Newer Port						
JNPT	*			*		
Paradip	*					*
New Mangalore	*					*
Tuticorin	*			*		
Ennore	*					*
Mormugao	*				*	

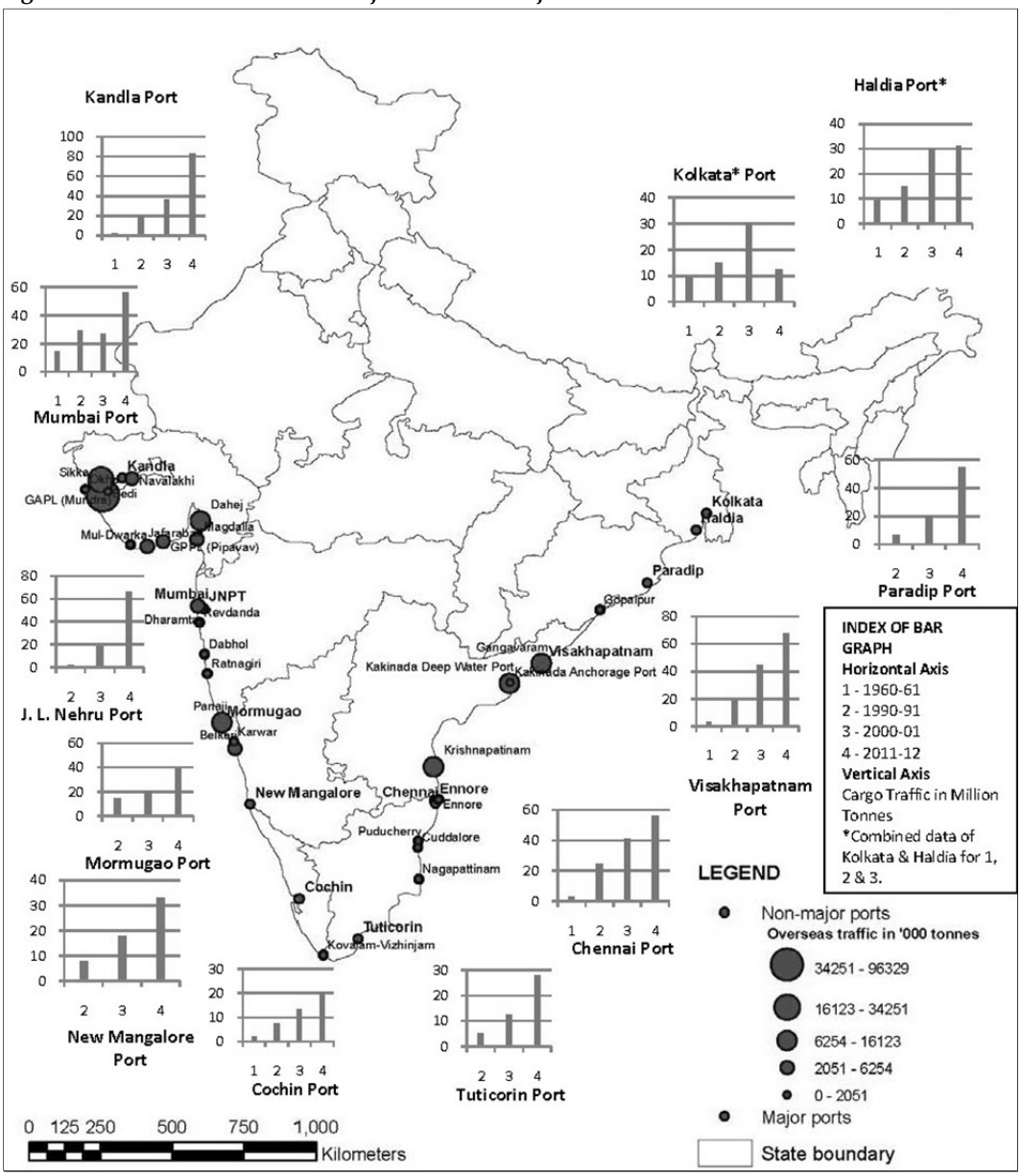
Source: Based on data from Ministry of Shipping, Road Transport & Highways, Government of India.

Figure 2: Share of Traffic Handled at Major and Non-major Ports in India, 1950–2013



Source: Ministry of Shipping, Road Transport & Highways, Government of India.

Figure 3: Traffic Handled at the Major and Non-major Ports in India



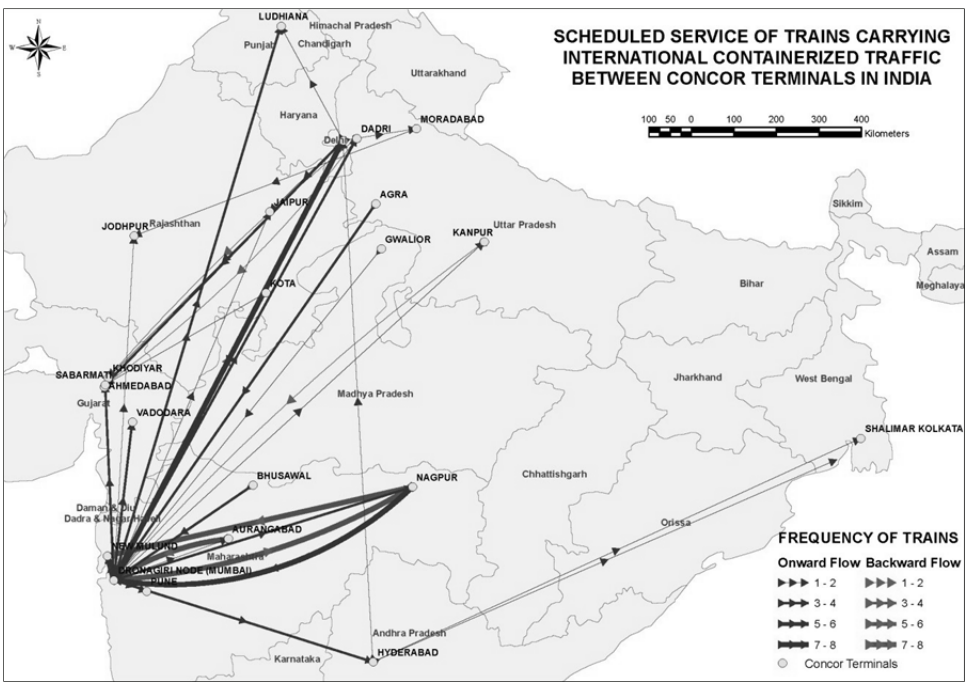
Source: Ministry of Shipping, Road Transport & Highways, Government of India.

2. Port Focused Development Corridor Projects and Regional Development

2.1 Development corridors and inland movement of cargo traffic in India

The government policy of investment in major transport infrastructure projects has facilitated and widened the scope for foreign and domestic trade in India. Such projects, it is anticipated, would enhance the development potential of regions in which they are located.

Figure 4: Inland Movement of International Containerized Traffic (CONCOR Terminals) in India



Source: www.concorindia.com

We take the case study of Delhi-Mumbai Industrial Corridor (DMIC) linked to the JNPT seaport to assess if the project has had a significant effect on the regional development of the area. The Delhi-Mumbai axis has a superior multi-modal transport system and is one of the busiest routes of containerized traffic movement in India. The frequency of railway trains carrying international containerized traffic is amongst the highest on this axis as we can see in *Figure 4*. The western region, through which this axis traverses, has the highest containerized traffic between the CONCOR dry port terminals because India has the following origin-destination pattern for it:

i) Origin - **western region** - Destination - northern region
   Origin - northern region - Destination - **western region**

ii) Origin - central region - Destination - western region
Origin - western region - Destination - north western region, central, south central, north western and north central region

2.2 The Delhi-Mumbai Industrial Corridor (DMIC): Linkages between Ports, Industrialisation and Urbanisation

The DMIC straddles seven states in north western and western India viz. Delhi, Uttar Pradesh, Haryana, Madhya Pradesh, Rajasthan, Gujarat and Maharashtra. In this analysis we refer to them as the corridor states. This region has a comparatively stronger industrial and urban base than the rest of the country and is serviced by the premier JNPT port. Four corridor states (Uttar Pradesh, Maharashtra, Rajasthan and Haryana) have generated more than 50 *per cent* of the national revenue from exports.

In this study we have tried to link the role of ports in regional development through two indicators:

i) The level of export oriented industrial development in terms of: a) presence of Export Oriented Units (EOUs) in the port linked Special Economic Zones (SEZs); and, b) emergence of Industrial clusters of Micro, Small and Medium Enterprises (MSME) in the hinterlands of dry ports (ICDs) connected to seaports.
ii) The levels and significance of urbanisation measured by the incidence of million cities in the port linked corridor region. These cities are expected to act as growth centres in the region.

2.2.1 *Export Oriented Units (EOUs) and Special Economic Zones (SEZs) in Delhi-Mumbai Industrial Corridor (DMIC)*

The DMIC had about 38 *per cent* of India's EOUs in 2012 and four important Special Economic Zones (SEZs) *viz*. Kandla, Santacruz Electronics Export Processing Zone (SEEPZ), Noida and Indore. The Kandla SEZ (catering to Gujarat) and SEEPZ (catering to the states of Maharashtra, Goa and the two Union Territories of Dadra & Nagar Haveli and Daman & Diu) have emerged as the country's highest performing SEZs in terms of exports by the EOUs (See *Table 4*).

The importance of development corridors in industrial development is further corroborated by the fact that apart from the DMIC, the other three corridor development programmes in India have also experienced proliferation of EOUs, particularly in the states of Karnataka, Tamil Nadu and Andhra Pradesh. The growth of EOUs in Tamil Nadu and Andhra Pradesh is continuing while some slow-down has occurred in Maharashtra, Gujarat and Karnataka. This indicates that southern India is catching up with the more developed western India in terms of growth of EOUs.

Table 4: Export Performance of Export Oriented Units (EOUs) (Value in Rupees Crore) and Units in Operation in the Special Economic Zones (SEZs)

SN	*Important SEZs*	*2005–06*	*Rank 2005–06*	*2006–07*	*Rank 2006–07*	*2007–08*	*Rank 2007–08*	*2008–09 (P)*	*Rank 2008–09 (P)*	*Units in Operation***	
										2009	*2012*
SEZs along Delhi-Mumbai Freight Corridor											
1	Kandla SEZ	4716.43	5	7420.88	5	90405.78	1	98582.38	1	292	244
2	Santacruz Electronics Export Processing Zone (SEEPZ)	8293.73	3	11900.1	3	19912.4	3	18539.12	2	486	443
3	Noida SEZ	8615.50	2	10546.8	4	10764.64	5	10608.82	5	401	312
4	Indore SEZ			794.77	8	885.08	8	1031.29	8	18	8
SEZs in other regions											
5	Madras SEZ	7557.91	4	13591	2	15651.38	4	14044.65	4	487	494
6	Visakha SEZ	2676.82	6	4366.62	6	7167.69	6	7908.36	6	243	258
7	Falta SEZ	1658.79	7	2509.95	7	2647.57	7	3086.39	7	98	80
8	Cochin SEZ	15943.20	1	18834.6	1	21404.24	2	17697.2	3	536	534
		49462.4		69964.6		168838.8		171498.2		2561	2373

Note: * (P) Figures for 2008-09 are provisional and subject to upward change.

Source: EOU India, Ministry of Commerce & Industry, Government of India, Lok Sabha Unstarred Question No.4475, dated 22.04.2013.

All Development Commissioners, SEZs based on APRs (QPRs for 2008-09) filed by EOUs.

2.2.2 *Export Oriented Industrial Clusters in Delhi-Mumbai Industrial Corridor (DMIC)*

Along with the EOUs, industrial clusters specialising in export based products have also concentrated in the DMIC states. This is particularly true in the case of Micro, Small and Medium Enterprises (MSMEs) clusters specialising in basic chemicals and chemical based products, engineering equipment, jewellery and textiles (see *Table 5*). We find that almost half the clusters in the country in these products have gravitated to the corridor states because of the advantages of connectivity to JNPT. This clustering gives this region potential to develop ancillary industries and services.

2.2.3 *Role of Dry Ports (ICDs) in Development of Export Oriented Units (EOUs) in Delhi-Mumbai Industrial Corridor (DMIC)*

With globalisation, an increase in trade and the development of multi-modal transport systems, the maritime trade related activities which were earlier concentrated around the ports have gradually moved closer to inland production and distribution centres of India. These centres function as dry ports and are referred to as Inland Container Deports (ICDs) and Container Freight Stations (CFSs).

Dry ports have been set up with great exigency in post-reform India in regions which have a concentration of EOUs, such as the DMIC, to facilitate movement of export oriented cargo to the seaports (see *Table 6*). Once established, the ICDs encourage the growth of existing EOUs and facilitate the establishment of new ones.

Table 5: Export Based Micro, Small and Medium Enterprises (MSMEs) Clusters in Delhi-Mumbai Industrial Corridor (DMIC) States

SN	*State*	*Basic Chemicals and Chemical Products clusters*		*Engineering equipment clusters*		*Jewellery clusters*		*Textile product cluster*	
		Number	*% share*	*Number*	*% share*	*Number*	*% share*	*Number*	*% share*
1	Delhi	1	1.72	4	7.41	-	-	4	2.38
2	Haryana	2	3.45	3	5.56	-	-	8	4.76
3	Uttar Pradesh	7	12.07	3	5.56	5	18.52	32	19.05
4	Rajasthan	2	3.45	1	1.85	1	3.7	6	3.57
5	Madhya Pradesh	1	1.72	4	7.41	-	-	13	7.74
6	Gujarat	12	20.69	12	20.69	4	14.81	9	5.36
7	Maharashtra	6	10.34	7	12.96	1	3.7	17	10.12
Total in Corriddor states		31	53.44	34	62.96	11	40.74	89	52.98
Total in India		58	100	54	100	27	100	168	100

Source: http://www.clusterobservatory.in/

Table 6: Functional Dry Ports (ICDs and CFSs) in Delhi Mumbai Industrial Corridor (DMIC) States—1992, 2002, 2012, 2013

SN	*State*	*Number of Dry Ports**			
		Pre-reform Period	*Post-reform Period*		
		1992	*2002*	*2012*	*2013*
1	Delhi		1	1	1
2	Haryana	1	3	14	14
3	Uttar Pradesh		9	17	19
4	Rajasthan		6	10	10
5	Madhya Pradesh		3	8	8
6	Gujarat	2	7	32	34
7	Maharashtra	2	19	51	53
Total in Corridor States		5 (50%)	48 (48.97%)	133 (50%)	139 (49.29%)
Total in India		10	98	266	282

Note: * Computed from list of ICDs/CFSs approved by the IMC which are under implementation or functioning as on 5.2.2014.

Source: Ministry of Commerce, Government of India, www.commerce.nic.in

The DMIC states have 44.50 *per cent* of the ICDs and 34.93 *per cent* of the EOUs in the country (*Table 7*). At the all-India level, the share of dry ports is higher in states which have higher EOUs, the Pearson correlation being .752 at the 0.01 level (2-tailed). The concentration of dry ports and EOUs in the Delhi-Mumbai Industrial Corridor signifies the well-developed logistic supply chain management of traffic flow in the region. Dry ports in India cater more to the international than domestic traffic. The share of international traffic has increased from 60 *per cent* in 1996–97 to 83 *per cent* in 2012–13 in the CONCOR dry ports. This reflects the advantage this facility has provided to the EOUs.

Table 7: State-wise Share of Functional Dry Ports (ICDs) and Export Oriented Units (EOUs), 2011

SN	*State*	*Share of functional ICDs (%)*	*Share of EOUs (%)*
1	Delhi	-	1.96
2	Haryana	3.47	3.88
3	Uttar Pradesh	6.94	3.76
4	Rajasthan	4.62	2.98
5	Madhya Pradesh	2.89	0.61
6	Gujarat	13.29	10.87
7	Gujarat	13.29	10.87
Total in Corridor states		44.50	34.93
Total in India		100.00	100.00

Source: Ministry of Commerce, GOI website & EOU India, Ministry of Commerce & Industry, Government of India.

2.2.4 *Dry ports and their linkages with Micro, Small and Medium Enterprises (MSMEs)*

Dry Ports in India have greatly influenced the location and growth of MSMEs, which are an important component of the country's export sector. The MSMEs, including khadi (hand woven cloth) and village/rural enterprises, contribute towards the social and overall development of the local economy and are credited with generating the highest rates of employment growth and a major share of industrial production and exports[9]. They contribute nearly 8 *per cent* of the country's GDP, 45 *per cent* of the manufacturing output and 40 *per cent* of the exports[10]. An Inter-Ministerial Committee (2013), constituted to accelerate manufacturing in the MSME sector, has suggested that it has the potential to emerge as an important contributor to India's growth.

In 2006–07, for which year we have data, we find that DMIC states, which were well endowed with dry ports (51.7 *per cent* share in the country's total), also had 38.4 *per cent* of MSME units, a 35.91 *per cent* share in employment generated by them, 51.15 *per cent* of the market value of their fixed assets and 39.99 *per cent* of MSME gross output.

2.2.5 *Concentration of Million Cities in Delhi Mumbai Industrial Corridor (DMIC) States*

More than half of India's million cities have emerged in the DMIC states, six of them (30 *per cent*) being added in the last decade alone. Out of the 27 million cities in these states, 20 are directly interacting with JNPT through the ICDs of CONCOR. Most of these cities have an industrial base and are among the more economically stable urban centres in

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[9] Srinivas, K.T. (2013), ' Role of Micro, Small and Medium Enterprises in Inclusive Growth,' *International Journal of Engineering and Management Research,* Vol. 3, Iss. 4, Pp.57–61. URL: www.ijemr.net.

[10] Ministry of Micro, Small and Medium Enterprises (2013), *Recommendations of the Inter-Ministerial Committee for Accelerating Manufacturing in Micro, Small and Medium Enterprises Sector*, New Delhi: Government of India, September.

India. These cities act as nodes which catalyse economic growth in the regional and national economy. The easy access to international markets through JNPT will only buttress their growth and economic viability in the future.

Table 8: Functional Dry Ports, Micro, Small and Medium Enterprises (MSMEs) Employment and Fixed Assets, 2006–07

SN	*States*	*% share Dry ports*	*MSME Units*	*MSME Employment*	*MSME Market value of fixed assets*	*MSME Gross Output*
1	Delhi	-	-	-	-	-
2	Haryana	3.98	2.43	2.44	3.77	4.94
3	Uttar Pradesh	7.95	11.29	11.81	8.14	10.31
4	Rajasthan	3.98	4.52	3.67	3.69	4.64
5	Madhya Pradesh	1.70	5.86	4.04	1.53	3.19
6	Gujarat	13.64	7.15	6.86	24.17	5.13
7	Maharashtra	20.45	7.15	7.09	9.85	11.78
Total in DMIC States		51.7	38.4	35.91	51.15	39.99
Total in India		100.00	100.00	100.00	100.00	100.00

Source: Ministry of Commerce, Government of India (www.commerce.nic.in), and Fourth All India Census of Micro, Small and Medium Enterprises (MSME), Annual Report 2012-13, Government of India.

Table 9: Million Cities in the DMIC States, 2001 and 2011

SN	*States*	*No. of million cities*		*Per cent of million cities in India*	
		2001	*2011*	*2001*	*2011*
1	Delhi	1	1	2.86	1.89
2	Haryana	1	1	2.86	1.89
3	Uttar Pradesh	6	7	17.14	13.2
4	Rajasthan	1	3	2.86	5.66
5	Madhya Pradesh	3	5	8.57	9.43
6	Gujarat	4	4	11.43	7.55
7	Maharashtra	4	6	11.43	11.32
Total in Corridor States		20	27	57.14	50.94
Total in India		35	53	100	100

Source: Census of India, 2011.

Conclusions

The analysis in this paper has led to the following conclusions:

- Indian port system is no more paths dependent and is responding to the contingencies surfacing from the globalisation process in the country. The old major ports are declining in their importance and some new major and several non-major ports geared to the demands and specifications of international trade are emerging in the system. Privatisation of the non-major ports has led to the creation of private captive ports.

- The eastern coast ports which have not been in the upper echelons of the port hierarchy are becoming important as trade with China and the Asian trade block is increasing. With the total reserves of over 28.52 billion tonnes of hematite and magnetite ore, India is among the leading producers as well as exporters of iron ore in the world. The exports of this ore are through the eastern ports. China is one of the major importers of Indian ore.
- The southern states in India are embarking on a growth path. They captured the new sectors of the economy that opened up after the reforms, particularly the ICT related and the "new" manufacturing industries such as automobiles and pharmaceuticals. Clusters of small scale export oriented enterprises are developing here which will give a boost to the port sector. Already the major ports of the southern states are improving their ranks in the port hierarchy. The Government of India is also preparing a comprehensive plan for the development of a port system on the east coast which serves these states.
- The State sponsored dedicated freight and industrial corridors are privileged locations in the new post-reform locational matrix of industrialisation and urbanisation in the country. All of the four planned corridors are linked to major ports in the country. This will necessitate better port performance and will bring about port modernisation and improved connectivity with hinterlands. Several hub ports will hence develop in the country in the foreseeable future. Many of these ports will also be the most important regional cities. There is already a concentration of million population cities in these corridors.
- With globalisation came an increase in trade and the development of multi-modal transport systems. The maritime trade related activities which were earlier concentrated around the ports have gradually shifted closer to inland production and distribution centres in the country. These centres function as dry ports. A large number of dry ports have been setup with great exigency in post-reform India in regions which have a concentration of export oriented enterprises to facilitate movement of cargo to the seaports. These dry ports have acted as catalysts in the growth of existing enterprises and have facilitated the establishment of new ones. Dry ports thus have been a boon to the local economies. The Public Procurement Policy of India has proposed that from 2012–13, the ministerial and public sector undertakings will procure 20 *per cent* of their supplies from small scale enterprises. This will not only boost production in the small units, but will also increase the scope of work of dry ports in the logistic chain of freight movement within the country.
- The port sector in India is a very significant part of its economy and is making positive contributions to it. However, its geography is detrimental to erasing of regional disparities in the country in many ways. There is a concentration of major, non-major and dry ports in regions which are relatively more developed. The development corridors are also being planned in the most developed regions of the country. Large tracts of the country are not linked internally or to seaports. Private ports are generally captive ports and have no linkages with hinterland economies. Maritime policy in India should address these issues.

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