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The Extended Gate – A Modern Solution to Port Hinterland Connectivity

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ABSTRACT--*Through its ambitious sagarmala project, the government is investing 91,371 crores to expand port capacity by 884 mt by 2035. The Shipping Ministry has identified six locations to build new ports. Besides this several new ports built with private funds have also become operational adding to the capacity.Under such circumstances the world bank has raised concern over the increasing port capacity in India. The 12 major ports run by the Central governmenthave handled a combined 679.35 mt of cargo in the year upto March 2018, operating at a capacity utilisation of only 50 per cent.Similar concerns have been expressed by DP World and PSA who are operating multiple facilities from India. This paper makes an attempt to provide an overview of the developments happening in hinterland connectivity and proposes the extended gate concept as a means to improve port connectivity*

Key Words--*Hinterland, Port connectivity, Terminal operator, Extended gate*

I. INTRODUCTION

With a long coastline of about 7516 km and a strategic location, India has robust plans to construct new ports so as to become a transshipment hub in South East Asia. Through its ambitious sagarmala project, the government is investing 91,371 crores to expand port capacity by 884 mt by 2035(1). The Shipping Ministry has identified six locations to build new ports — Vadhavan (Maharashtra), Enayam (Tamil Nadu), Tajpur (West Bengal), Paradip Outer Harbour (Odisha), Sirkazhi (Tamil Nadu) and Belekeri (Karnataka)(2).Besides this Several new ports built with private funds have also become operational adding to the capacity.Under such circumstances the world bank has raised concern over the increasing port capacityin India. The 12 major ports run by the Central government have a capacity to handle 1,359 million tonnes (mt) of cargo a year together. But all 12 of them have handled a combined 679.35 mt of cargo in the year upto March 2018, operating at a capacity utilisation of only 50 per cent.(3)The world bank is of the opinion that India needs more investment into connectivity and not capacity. Similar concerns have been expressed by DP World and PSA who are operating multiple facilities from India. With lot of economic activities going on in the hinterland, what India needs at the moment is a breakthrough in connectivity that would facilitate efficient transportation of cargo. This paper makes an attempt to provide an overview of the developments happening in hinterland connectivity and proposes the extended gate concept as a means to improve port connectivity and reduce congestion

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II. LOCATION OF INDUSTRIES IN INDIA

Industries maximise profits by reducing costs. Therefore they are located at points where the production costs are minimum. Some of the factors influencing industrial locations are access to market, access to raw material, access to labour supply, access to sources of energy and so on. The map indicating the location of major industries is given below.

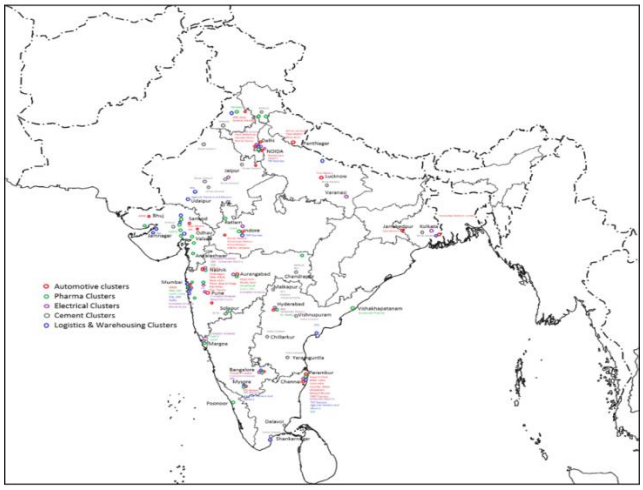

Figure 1: Location of major industries in India

Source:https://en.wikipedia.org/wiki/List_of_industrial_centres_in_India

It is evident from the above map that many of the cargo generating centres are located in the interior regions. Therefore an exceptionally good system of transportation is required to move the cargo generated to ports and vice versa. The Indian government has responded to this issue by investing vigorously into connectivity projects, particularly for the port segment. Under the Sagarmala Project, effort is being made to provide enhanced connectivity between the ports and the cargo production/consumption centres. The National Perspective Plan (NPP) of Sagarmala has identified more than 150 connectivity projects and envisaged investment of over INR 4 lakh crores over a tenure of 10 years. A total of 213 projects totaling to a potential investment of INR 250,915 Crore(4) have been identified to improve the connectivity to Indian ports.

III. HINTERLAND CONNECTIVITY IN INDIA

Port hinterland connectivity in India is currently surface based. Railways and roadways are extensively used for transporting goods to ports while pipelines are used for transporting liquid and oil products namely crude oil, refined petroleum products and natural gas. Though coastal shipping and inland waterways are used, they are in the nascent stage and their share is very low.

Under Sagarmala Programme more than 235 connectivity projects at an estimated investment of more than Rs. 2.35 Lac crore have been identified. Some of the types of connectivity projects considered are listed below (5)

- National waterways prioritized for development in the first phase
- Connectivity to Dedicated freight corridors

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- Last mile rail and road connectivity projects
- Major rail connectivity projects
- Freight friendly Expressway projects connecting the major ports
- Development of Multi-Modal Logistics Parks
- POL Pipeline

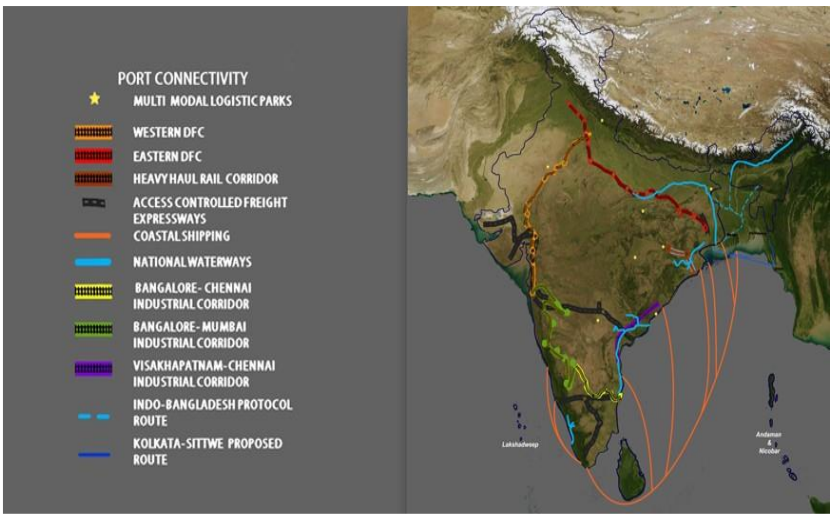

Figure 2: Port Connectivity

Source: Ministry of Shipping, Sagarmala

Some of the vibrant measures taken by the government to promote port connectivity are discussed below.

IV. RAILWAYS

The cost of transporting goods through railways over a long distance is lower compared to roadways. With most of the industries being located in deep hinterland, establishing rail connectivity to ports is of paramount importance. Already railway plays a major role in the movement of bulk cargo. In addition several projects have been initiated by the Government of India to promote rail connectivity, particularly container movement. In 2006, the Government announced the Container Train Policy allowing private operators to operate container trains on the Indian Railways network. Indian Port Rail Corporation Limited (IPRCL) has been incorporated as a Special Purpose Vehicle (SPV), under the Ministry of Shipping, to fast track the port-rail connectivity projects. Dedicated Freight Corridors (DFC) have been developed exclusively for freight transport along the Eastern and Western corridors of India is a milestone achievement. This project is expected to decongest the road network besides shifting the transportation to the cost effective railways. This project has been given further boost under the Sagarmala project with a total 65 rail connectivity projects at a cost of over INR 46,032 crore of 4051 kms length(6) proposed to be developed.

V. ROADWAYS

Roadways is the primary mode of transport for movement of cargo to and from ports. About 65% of freight in India is transported through roadways (7), besides it offers the crucial last mile connectivity to ports. The National Highways Authority of India (NHAI) is the nodal agency involved in financing, constructing, and managing the

Indian national highways. The body has paid special attention to port connectivity and has developed four lane road hinterland connectivity with many ports across the country. The Sagarmala project has identified 112 road connectivity projects involving upgradation or construction of 8705 Kms of roads, requiring investment of INR 180,615 crores(8), to improve the connectivity to ports. These projects are proposed to be implemented by Ministry of Road Transport & Highways (MoRTH), National Highway Authority of India (NHAI), State Public Works Department (SPWDs) and Port Trusts.(9)

The Bharatmala project under the aegis of MoRTH is another pioneering project which would incorporate all existing highway projects including the National Highways Development Project (NHDP). This project would further support hinterland connectivity for ports.In addition, MoRTH is upgrading another 1500 major bridges (10)on the national highway network to further improve port connectivity

VI. PIPELINES

India has 41,456 kms of pipelines, which includes 9,572 kms of crude oil pipelines and 17,421 kms of gas pipelines(11).Pipelines are used to carry crude oil from the ports to the land locked refineries located in the hinterland.They are the preferred mode of transport for oil and gas as they are cost effective, pollution free and have lower transit losses. The Sagarmala project has identified three high-potential Pipeline projects namely – Crude Project at Salaya-Mathura (cost INR 1584 Cr.), Crude Project at Chennai Petroleum Corporation (cost INR 500 Cr) and Product Pipeline at Hyderabad-Paradip (cost INR 3000 Cr) (12)for transportation of crude oil and petroleum products and they are underway

VII. INLAND WATERWAYS

India has high potential in Inland waterways. There are 111 National Waterways(13) but they are highly underutilized.Currently, inland waterways are used to transport only 0.5% (14)of the total cargo movement in India. If developed, this can be a highly cost effective mode of transportation. It is as much as 60% to 80% lower than Road and Rail(15). This would also save considerable time besides reducing the overloading of roadways and railways thereby achieving a balance.

The statistics for Cargo Movement for the Indian National Waterways in the FY 2017-18 are as under

Stretch	**In Metric Tonnes**
National Waterway-1 The Ganga	5,480,000
National Waterway-2 The Brahmaputra	561,469
National Waterway-3 West Coast Canal	427,988
The Goa Waterways	11,090,000
Maharashtra Waterways	25,960,000
Gujarat Waterways	11,520,000

Figure 3: Cargo Movement for the Indian National Waterways - FY 2017-18

Source: https://maritimeinvest.in › images › pdf › sector-profile-hinterland-connect.

Understanding its potential the government has now decided to extend its role as a provider, facilitator and regulator and simultaneously offering various concessions to rope in the private sector to invest in the creation of inland waterways infrastructure and fleet operations.

VIII. COASTAL SHIPPING

Besides its high potential, coastal shipping is also underutilised in India.It has grown at a CAGR of approx. 10% between 2015 and 2018(16). The Sagarmala Programhas taken the following initiatives to promote coastal shipping

- Cabotage relaxed for 5 years for specialized vessels (RO-RO, RO-PAX)
- Inter-Ministerial Committee (IMC) constituted to develop a strategy and roadmap for coastal shipping ofcoal and other commodities /product
- Coastal Berth Scheme has been implemented for financial assistance to develop infrastructure for coastalcargo movement at ports
- Customs & excise duty exemption on bunker fuel for coastal container vessels
- Reduction of service tax on coastal shipping
- Green channel clearance for coastal cargo
- Exemption on lighthouse dues for coastal ships

IX. INLAND CONTAINER DEPOTS (ICD) AND MULTIMODAL LOGISTICS PARKS (MMLPS)

Besides its robust investment in the different modes of transport, India is strengthening its logistics network through development of Inland Container Depots (ICD) and Multimodal Logistics Parks (MMLPs). Locating ICDs and MMLPs at key points along road, rail and water network would considerably improve hinterland connectivity. ManyMMLP projects are under various stages of development. At present, under the Sagarmala Programme, 15 Multi-Modal Logistics Parks (MMLPs) are being developed at the cost of around INR 3,561 Cr(17). Out of these, 7 MMLPs are being implemented by CONCOR, 6 MMLPs by Port Trusts, 1 MMLP by Siliguri Jalpaiguri Development Authority and 1 MMLP being developed jointly by Govt. of Assam and MoRTH.(18)

X. THE EXTENDED GATE CONCEPT

Ideally speaking the connection from port to hinterland must be continuous, and this can be achieved through multimodal transportation supplemented by effective network of road, water and rail. When India is vigorously improving its port connectivity through massive investments into transport and logistics,the extended gate concept can be an innovative solution to further enhance its hinterland connectivity. An extended gate is an inland terminal that is directly connected to the port through some means of high capacity transport. This facilitates the port customers to drop or pick their containers as if they are dealing with the port directly. This concept refers to the strategies adopted by a single terminal operator to improve its hinterland services. When a port takes steps to improve its hinterland connectivity it is called port regionalization. Therefore the extended gate concept is a form

of port regionalization where the services offered by a terminal operator goes beyond its gate. This involves horizontal and vertical integration and extension of its services.

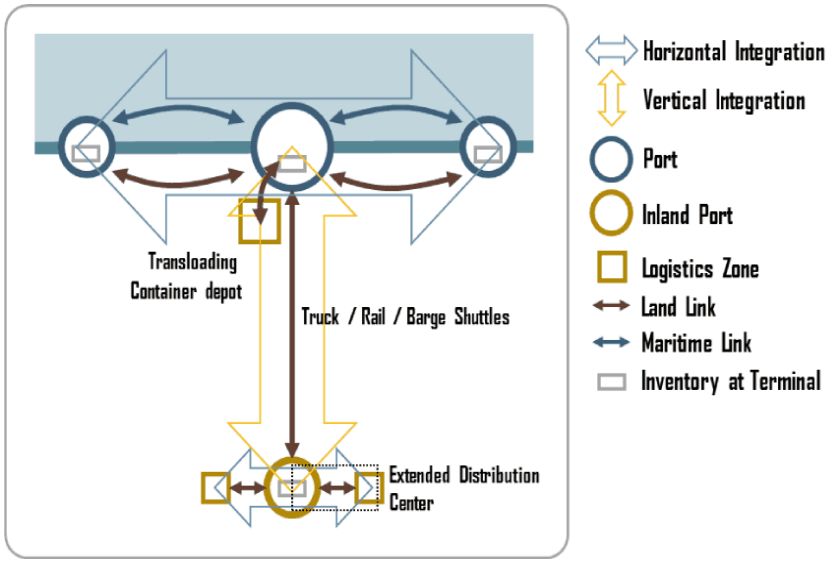

Figure 4: The Extended Gate Concept

Source: https://transportgeography.org › ... › Transport Terminals and Hinterlands

Horizontal Integration: Terminal operators have the option of setting services to a terminal located in another port, and this can be either through maritime (feeders) or land (rail shuttles) connections. They can thus deliver containers in a nearby port on behalf of their customers (19)

Vertical Integration*:* The integration of a terminal with transloading activities and container depots is a form of vertical integration where a terminal operator offers, or connect to, inland logistical services that are beyond its gates.(20)

The kind of investment that is happening in India to create more advanced and high capacity connectivity is sure to facilitate both vertical and horizontal integration. The pace at which DFCs, MMLPs and ICDs are developed would certainly facilitate vertical integration. By setting transport services to a dry port, a terminal operator will be able to deliver (or pick up) containers at a facility closer to main importers or exporters. The dry port becomes the extended gate of the port terminal. India's plans to develop inland waterways and coastal shipping would result in more inland ports. A terminal operator can connect with other terminals in inland ports thereby integrating with them horizontally.Additional activities, such as customs clearance, consolidation and cargo inspection could also take place at the extended gate, freeing up space at the port and leading to reduced congestion.

Already the possibility of adopting the extended gate concept is being explored in Kolkata.

With the development of the Eastern Dedicated Freight Corridor and National Waterways 1, container and goods traffic is bound to increase at the ports of Kolkata and Haldia. An extended gate serviceby the terminal operators would allow long haul traffic to be directly evacuated from the port to an extended gate and vice versa.This would greatly decongest the city of Kolkata, as long haul traffic makes up about 40% of the freight entering the ports(21). If this is successful the same strategy can be adopted for other congested ports such as JNPT and Chennai.

XI. CONCLUSION

Despite being a maritime nation, port hinterland connectivity has always been a problem for India. With plenty of cargo being generated in the interior regions, absence of an efficient connectivity networkresulted in delays and increased cost of transportation due to multiple handling of cargoand cumbersome procedures. India has been steadily increasing its port capacity to facilitate trade. But the fact that allmajor ports are operating only at 50% capacity shows inadequate cargo which can be enhanced by promoting hinterland connectivity. Therefore the need of the hour for the country is connectivity and not capacity. Understanding this the country has started making robust investments into major infrastructure projects.At this juncture, the extended gate concept is expected to supplement the efforts towards connectivity. In many of the Indian ports, the terminals are operated by international players such as DP World, PSA and private parties such as Adani group. Establishing extended gate serviceswould be attractive only if it fetches enough business for them. Further it must be supported by an efficient network of connectivity to facilitate horizontal and vertical integration. While the government is taking enormous measures to promote port hinterland connectivity, it is high time for the terminal operators to explore the extended gate concept in India.

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