BRIDGING INFRASTRUCTURAL DEFICITS AT SELECT TRADE PORTS IN INDIA

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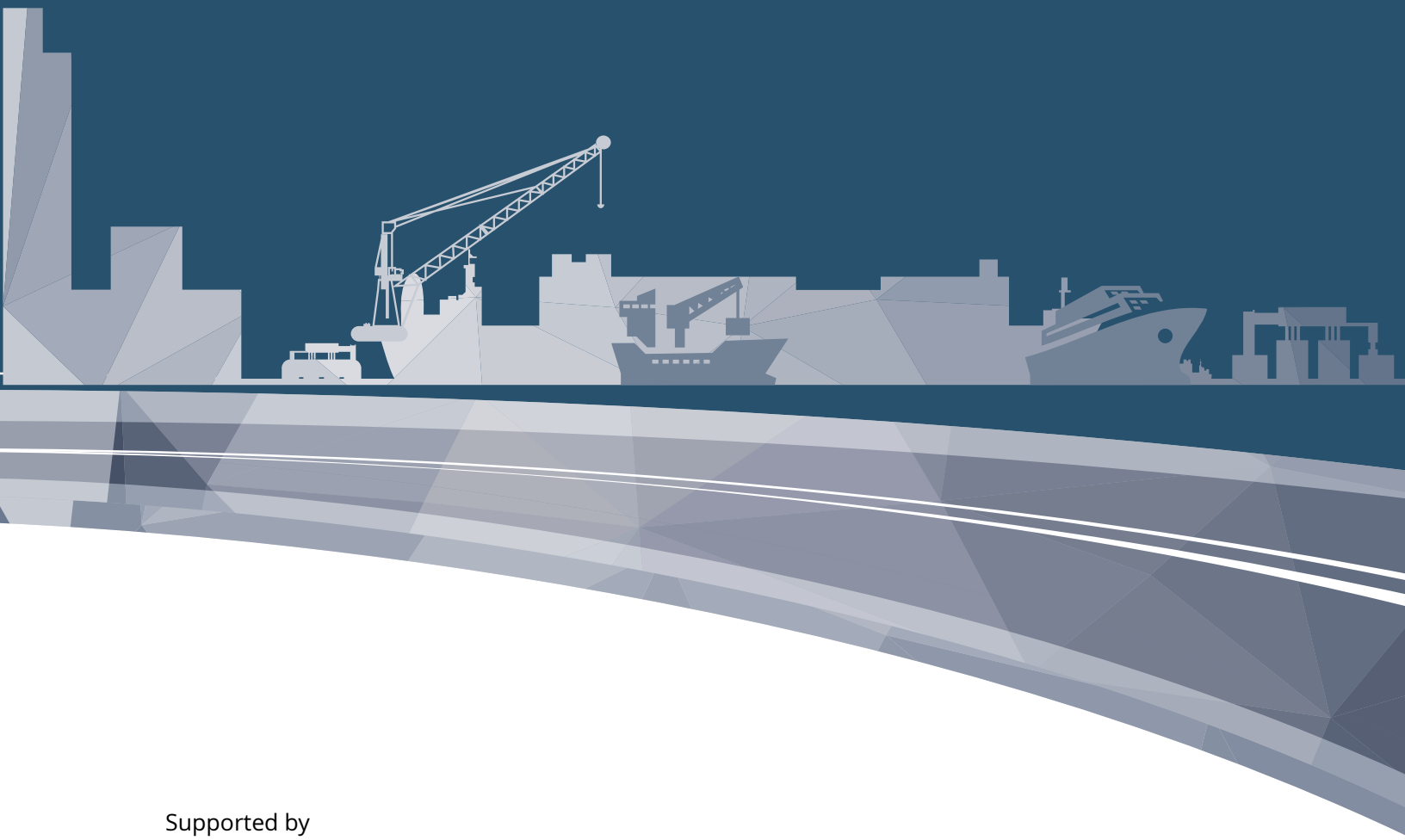

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ABOUT
BRIEF

Bureau of Research on Industry and Economic Fundamentals (BRIEF) is an economic research organization with focus on diagnostic studies, policy research, program implementation and assessment of various schemes in the socio-economic domain. Our past engagements have spanned across areas such as international trade, infrastructure and policy analysis with special emphasis on India and other developing countries.

Over the years, we have been advising on developing inclusive and sustainable growth models for our clients. BRIEF functions as a research partner to various academia and research institutions in carrying extensive research on contemporary issues. We have been undertaking research on several areas to facilitate India's integration with the world economy with clients such as The World Bank, GIZ, FICCI, SIDBI, Dun & Bradstreet, British High Commission, among others.

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by

Shakti Sinha (Project Advisor)

Afaq Hussain

Samit Chakraborty

Riya Sinha

Akhtar Malik

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BRIDGING INFRASTRUCTURAL DEFICITS AT SELECT TRADE PORTS IN INDIA

It's not all about investments…

Mohammad Saqib
CEO, BRIEF

Trade ports of India form a very important gateway facilitating international trade carried out by the country. Around 80 per cent of India's EXIM trade is carried through more than 200 sea ports spanned over a coastline of 7,500 kilometres.

Trading environment in India has experienced significant resurgence in the recent decades, defined by strengthened global ties, improved capacities and stable overall growth trends. The trend of public-private partnerships, which started in mid 1990s in India, has continued to grow and become the most preferred mode of investment with foreign investors willing to become part of India's growth story.

The port sector in India has also gone through substantial evolution over the last decade. All avenues of the sector — operational, capacity and investments — have witnessed significant growth. The Government of India has constantly demonstrated strong inclination towards modernisation of existing infrastructural facilities, facilitation for investments as well as the introduction of best-in-class infrastructure and policy reforms in the port sector. These developments have been further augmented by major initiatives such as Make in India, Ease of Doing Business and the government's global engagements aimed at enhancing foreign investments. These initiatives are expected to play a vital role in changing the dynamics of trade in India.

Within the above framework, the importance of assessing India's port infrastructure cannot be overemphasized. The report reviews the current scenario at selected trade ports in India and identifies the key challenges which need to be addressed. The report also provides recommendations and possible areas of action to overcome these challenges.

I sincerely hope that you find this report insightful and useful. The recommendations made in this report promises to aid overall improvements in the Indian port sector, the positive effects of which are expected to trickle down on the trading environment in the country.

Contents

Abbreviations

ACP	Accredited Client Programme
APBDT	Average Pre-Berthing Detention Time
APEDA	Agricultural and Processed Food Products Export Development Authority
APL	Adani Power Limited
APSEZ	Adani Ports and Special Economic Zone Ltd
BoE	Bills of Entry
BOOST	Build Operate Own Share Transfer
BOOT	Build Operate Own Transfer
BOT	Build Operate and Transfer
BPCL	Bharat Petroleum Corporation Limited
CAGR	Compound Average Growth Rate
CBEC	Central Board of Excise and Customs
CCFC	Customs Clearance Facilitation Committee
CCTV	Closed Circuit Television
CFS	Container Freight Station
CGPL	Coastal Gujarat Power Limited
CHA	Customs House Agent
CONCOR	Container Corporation of India Ltd
CRCL	Central Revenue Control Laboratory
DBFOT	Design Build Finance Operate Transfer)
DFCCI	Dedicated Freight Corridor Corporation of India
DO	Delivery Order
DWT	Dead Weight Tonnage
EDF	Export Development Fund
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
FEU	Forty Foot Equivalent Unit
FSSAI	Food Safety and Standards Authority of India
GDP	Gross domestic product
GOI	Government of India
GTICT	Gateway Terminals India Container Terminal
HDC	Haldia Dock Complex
HOJ	Haldia Oil Jetties
HPCL	Hindustan Petroleum Corporation Limited
ICD	Inland Container Depot
ICEGATE	Indian Customs EDI Gateway
ICES	Indian Custom Electronic System
ICP	Integrated Check Post
ICTT	International Container Transshipment Terminal
IGM	Import General Manifest
IWT	Inland Waterways Transport

JNPT	Jawaharlal Nehru Port Trust
KDC	Kolkata Dock complex
LAD	Least Available Depth
LCL	Less-than-Container-Load
LCS	Land Customs Station
LPAI	Land Port Authority of India
MbPT	Mumbai Port Trust
MCA	Modal Concession Agreement
MCuM	Million Cubic Meters
MGT	Minimum Guarantee Tonnage
MHA	Ministry of Home Affairs
MHC	Mobile Harbour Cranes
MMTPA	Million Metric Tonnes Per Annum
NHAI	National Highways Authority of India
NMDP	National Maritime Development Programme
NSICT	Nhava Sheva International Container Terminal
NW	National Waterways
ONGC	Oil and Natural Gas Corporation
PCS	Port Community System
POL	Petroleum Oil and Lubricants
PPP	Public Private Partnership
PPT	Paradip Port Trust
PTFC	Permanent Trade Facilitation Committee
QC	Quay Crane
RASIPL	RAS, Infra Private Ltd.
RMGC	Rail Mounted Gantry Cranes
RMQC	Rail Mounted Quay Cranes
RMS	Risk Management System
RTGC	Rubber Tyred Gantry Cranes
SCI	Shipping Corporation of India Ltd
SOP	Standard Operating Procedure
SPM	Single Point Mooring
TAMP	Tariff Authority of Major Ports
TEU	Twenty Foot Equivalent Unit
TAT	Vessel Turnaround Time
ULCCV	Ultra Large Crude Carrying Vessel
USD	United States dollar
VLCC	Very Large Crude Carriers
WTO	World Trade Organization

List of Tables & Figures

Executive Summary

Introduction

The report 'Bridging Infrastructural Deficits at Select Trade Ports in India' is the outcome of a year-long quantitative and qualitative study, initiated in April 2015, by Bureau of Research on Industry and Economic Fundamentals (BRIEF). The study is aimed at facilitating India's trade and improving its trading environment through infrastructural and policy reforms at select land and sea ports. For a developing economy of India's size and potential, infrastructural development at trade ports is necessary to capitalize on trade opportunities and thereby promote overall growth.

In the last five years, the Indian port sector has witnessed rapid changes in congruence with the change in trends in international trade including persistent growth in traffic - particularly container. The government is also showing strong inclination towards the development and modernization of ports. The prospects of the sector are expected to be further bolstered with global ports and shipping corporate as well as investors eyeing for stakes in the sector. These developments are in line with other major initiatives of the central government like Make in India, Ease of Doing Business and its global engagements aimed at enhancing foreign investments and providing necessary fillip to India's bilateral and regional trade engagements. Owing to these developments, the ports sector, which has witnessed unprecedented growth in capacity, traffic and investments in the last decade, is expected to witness considerable augmentation in cargo volumes.

To handle this surge in traffic growth, infrastructural, operational and regulatory aspects at ports in the form of capacity, equipment, connectivity, logistics and governing regulations would need to go through significant developments over the existing scenario.

In this context, the present study, Bridging Infrastructural Deficits at Select Trade Ports in India, has been carried out to assess the current infrastructural and policy deficits at the selected land and sea ports i.e. JNPT, Paradip Port Trust, Haldia Dock Complex, V.O Chidambaranar Port Trust (Tuticorin), Cochin Port Trust, Attari Integrated Check Post and Petrapole Land Customs Station, with a view to arrive at port-wise plan of action aimed at achieving adequacy in infrastructure, removing operational bottlenecks as well as the strengthening of port policies.

Approach

A first hand assessment of the prevailing scenario at the ports with respect to infrastructural and operational aspects was carried out through visits to all the selected ports and summarization of preliminary observations. The field visits were followed by consultations and engagements with the port authorities, traders, CHAs, shipping lines, port operators, industry associations, concerned ministries and other relevant stakeholders at each port. The study also entailed a review of the current regulatory environment governing operations at the ports through detailed and critical review of policy documents such as Working Group Report for Port Sector for the Twelfth Five Year Plan (2012-17), Maritime Agenda 2020, Model Concession Agreement, etc.

Key Deliberations

Through the above approach, multiple issues were identified at the selected ports. The major impediments which were prevalent at most of the selected ports included congestion at the approach roads, low draft, inadequate mechanisation, lack of testing facilities and labour issues. Other issues such as those associated with self-sealing and RMS for exports were observed to be unique to some ports like V.O. Chidambaranar Port and Cochin Port.

Post the identification of port-wise challenges as well as issues pertaining to the port sector as a whole, incisive insights could be gathered as regards feasible remedial measures to address the same. Detailed roadmaps for key issues including plans of action for all the selected ports for the shorter and longer terms have been developed as an effort towards facilitating seamless trade activities through these ports and thereby participating in the overall trade facilitation process of the country. Notably, it was gathered that while in each port, specific patterns of issues are displayed based on differences in demographics, capacity, operational aspects, etc., detailed assessment of the same makes way for opportunities to find specific remedial measures i.e. solutions for port specific development as well as policy initiatives for the sector as a whole. Such measures have also been assessed in detail in the report.

Based on detailed deliberations with key stakeholders as well as careful analysis of observations made at the selected ports, indicative plans of action - for the selected ports - inclusive of key infrastructural, operational and policy measures have been proposed. These plans include recommendations such as diversification of cargo profile, procurement of requisite equipment for adequate mechanisation, installation of fixed type scanners, encouragement for self-sealing of containers, resolution of land issues and streamlining of logistics-based procedures. The report also focusses on resolving issues applicable to the port sector as a whole through measures such as single window integration of various processes and emphasis on paperless transaction, strengthening of the present ICES and PCS systems, regular trade facilitation meetings, and the introduction of CFSs that are operational 24x7 among others.

Finally, an effort has been made in the report towards summarising the key areas of development as well as creating possible scenarios (including benchmarking with relevant national and international ports) towards achieving such developmental goals.

From a study perspective, this report is useful as it brings the issues and suggested plans of action directly from the stakeholders.

INTERNATIONAL TRADE SCENARIO

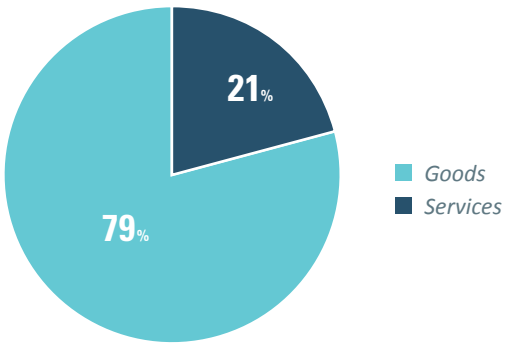
Chapter 1

1.1. Trade Overview

International trade over the last few decades has been growing at a very rapid pace. Favorable policies, technological advancements and innovative business models have driven this growth, bringing down the costs of cross-border transactions. The growth, however, has been sluggish following the global economic crisis of 2008, and the average rate of growth has been less than 2 per cent per year since 2011, which is considerably less than the pre-recession rate of 6 per cent. A further slowdown in the last couple of years has been a direct result of a decrease in the growth rate of merchandise exports.

Global trade increased by 2.5 per cent in 2014, as compared to 2.4 per cent in 2013, to reach USD 24 trillion. This marginal increase in the growth rate can be attributed to the slowdown in global demand for fuels and mining products, which decreased by 5 per cent in 2014.

The bulk of international trade comprises of merchandise trade (physical goods), while services



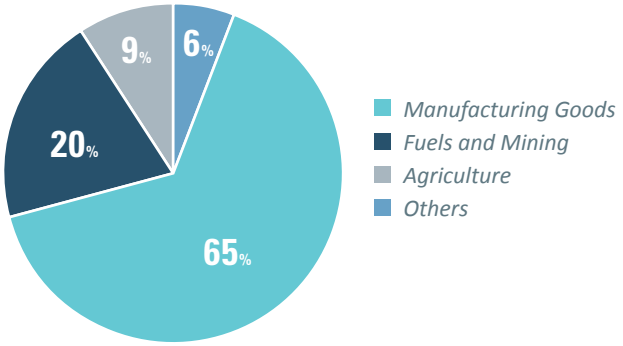
Source: Key Statistics and Trends in International Trade- UNCTAD

Fig. 1.1. International Trade

account for a much lower share (**Fig. 1.1**). As of 2014, world trade in goods was valued at more than USD 19 trillion, while trade in commercial services accounted for around USD 4.9 trillion.

1.1.1. Merchandise Trade

International merchandise trade in 2014, grew at meagre rate of 0.3 per cent to reach USD 19 trillion, with the prices of major commodities, especially fuels and mining products heading south. The positive growth rate was however maintained by a 4 per cent growth in manufactured goods and 2 per cent growth



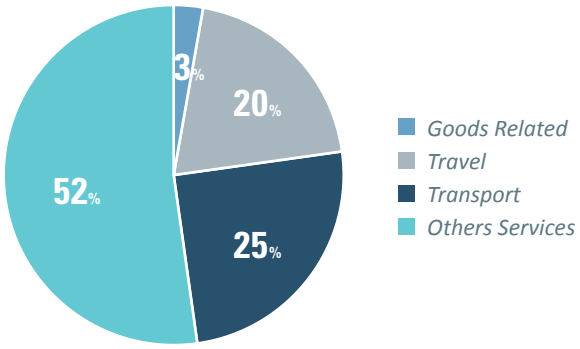
Source: International Trade Statistics- WTO

Fig. 1.2. Break-up of International Merchandise Trade

in agricultural products. The two commodities together constituted 74 per cent of merchandise trade in 2014 (**Fig. 1.2**).

1.1.2. Services Trade

Services, which are an integral part of production fragmentation and global value chains (GVCs), continued to grow at a consistent rate of 5 per cent in 2014. Travel and transport services continued to be the major drivers of this growth. These major service types grew at 6 per cent and 2.7 per cent respectively. These two categories constituted nearly half of the global trade in services in 2014 whereas the other half was made up by the other ten categories[1] (**Fig. 1.3**).



Source: International Trade Statistics- WTO

Fig. 1.3. Services Trade Break-up

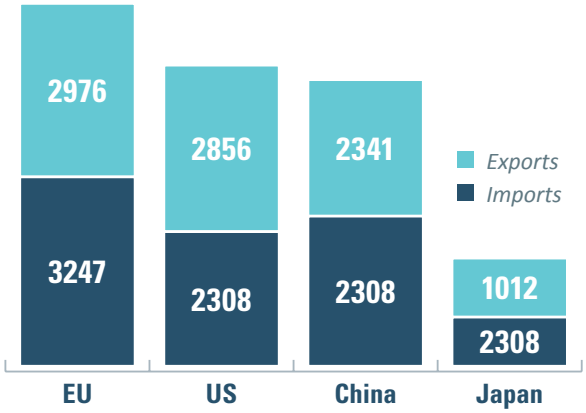
1.1.3. Regional Trade Distribution

The global slowdown has had a considerable effect on the regional distribution of international trade. Slow

[1] 9 categories of services have been grouped under 'Other Services' in Fig. 1.3. These include:Communication, Construction, Insurance, Finance, Computer and Information, Personal, cultural and recreational , Government services, Royalties and license fees and other business services.

growth trends have been evident in all the geographic regions but in varying degrees. The geographic landscape of international trade has been majorly shaped by the increased import demand from East Asia, sluggish economic growth in developed nations, and the continuous economic and political turmoil in various parts of the world. The major shareholders of international trade saw continued but low growth whereas trade in smaller countries (African and CIS countries) faced stagnation and even shrinkage in value and volume. As per data from WTO, more than two-thirds of the global merchandise exports in 2014 came from Asian and European countries.

China, the US and the EU (WTO member states) were the major shareholders of International trade in 2014, comprising more than 40 per cent of international imports and exports (**Fig. 1.4**).



Source: International Trade Statistics- WTO

Fig. 1.4. Region-wise Share of World Trade EXIM (Billion USD)

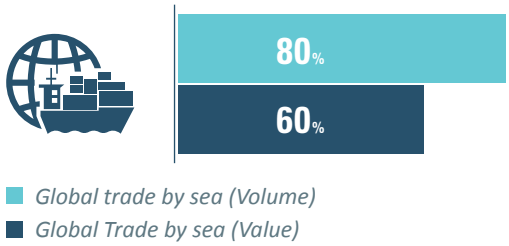
The economic expansion trends in certain regions of the world in the recent past have been majorly the result of the expansion of emerging markets (EMs) like BRICS (Brazil, Russia, India, China and South Africa) and others. In the coming years, the growth of trade between EMs is likely to far outstrip the increase in trade between advanced economies, radically re-shaping the dynamics of international trade.

1.2. Maritime Trade

The landscape of the global economy has been in transition in the recent decades. Globalisation, in general, and the insatiable demand for energy and raw materials in particular, have effectively reshaped international trade flows during the last decade.

The growth in the amount of freight being traded as well as the increased geographical diversity of cargo movement have augmented the importance of maritime transportation as a fundamental element supporting the global economy. The demand for maritime transport has been further amplified with an increase in the trading distances between countries.

Empirically, the importance of maritime transportation in international freight trade is evident with the fact that it handles about 80 per cent of the international trade in volume and around 60 per cent in value (**Fig. 1.5**). International maritime trade grew by 3.4 per cent in 2014 which was the same as the growth in 2013.This stagnation can be attributed to a number of factors, including a slowdown in large emerging developing economies, lower oil price levels, new refinery capacity developments, as well as slow-moving and uneven recovery in the advanced economies.

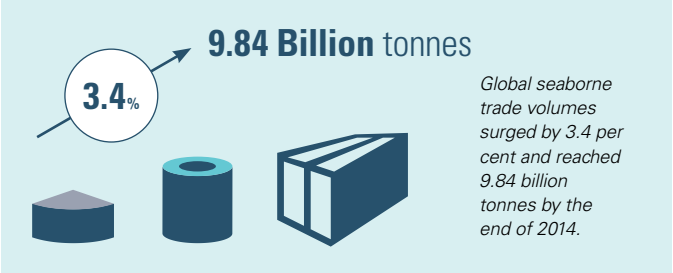


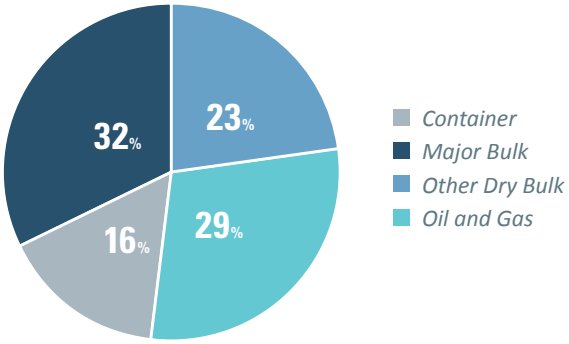
Source: Review of Maritime Transport 2015- UNCTAD

Fig. 1.5. International Trade by Sea

1.2.1. Freight Distribution by Cargo Type

The global freight increased marginally from USD 9.5 billion in 2013 to USD 9.8 billion in 2014. Bulk cargo continued to hold the biggest share in merchandise cargo, accounting for more than half of the total maritime freight carried in 2014, followed by tankers and containers (**Fig. 1.6**). As far as individual products are concerned, crude oil remained the largest carried item in maritime trade followed by containers, iron-ore and coal (**Fig. 1.7**).

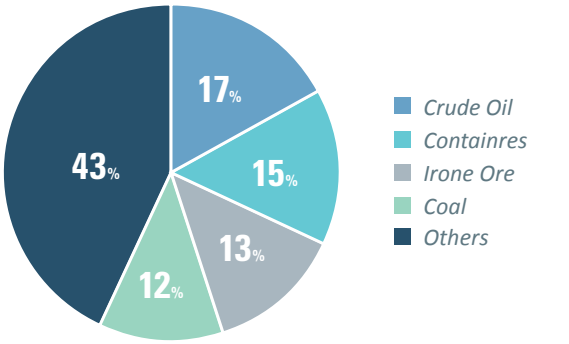




Source: Review of Maritime Transport 2015- UNCTAD

Fig. 1.6. Maritime Freight by Cargo Type

In terms of container trade, ports around the globe moved 684 billion twenty-foot equivalent units (TEUs) in 2014. Chinese ports continued to take the lions share in container trade, handling more cargo, both in terms of metric tonne volume and number



Source: Review of Maritime Transport 2015- UNCTAD

Fig. 1.7. Maritime Trade by Commodity Type

of TEUs, than any other country in the world. Eight out of world's top ten ports are South-East Asian ports among which six are Chinese, clearly reflecting Chinese dominance in maritime trade. **Table 1.1.** provides a list of the top ten ports in the world by volume.

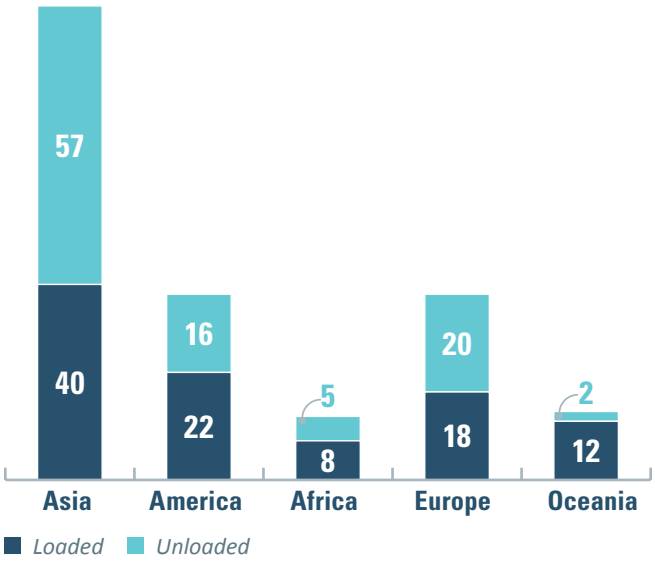
1.2.2. Freight Distribution on the basis of Geography

Developing countries continued to contribute larger shares to international seaborne trade. The regional share of maritime freight reveals that Asia continued to dominate as the main loading and unloading region followed by the Americas, Europe, Oceania and Africa in 2014 (**Fig. 1.8**). Asian countries contributed nearly half of the loaded tonnage and slightly over half of the unloaded tonnage globally depicting the 'Shift East' trend in global merchandise trade.

Port	Country	Million TEUs
Shanghai	China	35.29
Singapore	Singapore	33.87
Shenzhen	China	24.04
Hong Kong	China	22.23
Ningbo	China	19.45
Busan	South Korea	18.68
Qingdao	China	16.62
Guangzhou	China	16.16
Jebel Ali	U.A.E	15.25
Los Angeles	U. S	15.16

Source: Alphaliner

Table 1.1. Top 10 Container Ports of the World by Volume (2015)



Source: Review of Maritime Transport 2015- UNCTAD

Fig. 1.8. Region-wise Break-up of Maritime Freight (%age)

1.2.3. Fleet Scenario

Slow growth in overall tonnage carried through maritime routes also affected the growth in world

89,464 vessels with a tonnage of **1.75 billion DWT**

fleet. The world fleet grew by 3.5 per cent by the end of 2014, the lowest annual growth rate in over a decade. The world fleet was dominated by dry-bulk vessels, reaching a share of 43.5 per cent of total capacity by the beginning of 2015. Container ship fleet, on the other hand, grew by 5.6 per cent in 2014. A peculiar trend with the growing world fleet is that the vessel size is growing ever larger, holding down the cost of ocean shipping but posing serious operational challenges to the port/terminal operators. To meet the demands posed by the growing size of vessels, ports have been focusing on bigger and better port infrastructure.

The Biggest Container Vessel

Length	396m (1,300ft)
Beam	59m (194ft)
Draught	16m
DWT	197,362
TEU	19,224

1.2.4. Challenges

The strategic importance of maritime transport in international trade cannot be overemphasized. However, there are many challenges faced by maritime countries, specifically developing countries like infrastructure issues, lack of technology and poor equipment and operational standards. Addressing these physical and non-physical barriers remains key for maritime countries to enhance their market share in international maritime trade.

1.2.5. Emerging Trends in Maritime Trade

Maritime transport is dependent on global trade which in turn is driven by consumer behavior. In order to understand the trends in maritime trade, one will have to get insights into how economies across the globe develop, evolve and plan for change. A number of trends are currently reshaping international maritime transport and trade. These trends are also determining trade competitiveness of countries by defining costs, prices, logistics structures, supply chains and comparative advantages. Some of the emerging trends that are changing the landscape of maritime trade include:

- **Growing South-east Asian Trade:** Even as economic growth in emerging markets has slowed, the global balance of economic power continues to "Shift East", most notably to China. Emergence of new consumer classes and resource demand is expected to change the dynamics of maritime trade.
- **Mergers and Acquisitions (M&A):** M&As are gaining momentum within the shipping lines and terminal operators, to counter overload capacity and low freight rates. Shipping carriers have been struggling with persistent overcapacity and low freight rates, and a major way to attain economies of scale is consolidation among players. This trend has already been seen in the maritime world for few years now and there is an increasing number of companies which have become interested in creating alliances.
- **Handling Growth:** As maritime trade volumes continue to grow there is going to be a substantial increase in port activities, resulting in increased pressure on terminal productivity and supply infrastructure. Ports will have to devise suitable strategies to handle such growth while maintaining costs and other competitive/comparative advantages that they may have.
- **Alternatives to Oil:** There is significant trend towards finding alternative sources of energy within the maritime sector. This is expected to spur the next wave of innovation in energy efficiency, which will change the variables affecting maritime trade.
- **Technological Innovation:** Innovative advancements in technology across the shipping value chain to reduce costs, ensure improvements in efficiency and exercise higher flexibility in the shipping sector to meet future regulations, will continue to play an important role in increasing the share of ports in maritime trade.
- **Climate Change:** Adapting to climate change by cutting down on the emissions also forms and important aspect of trade in today's date. Consequently, the impact on the shipping industry is likely to be significant and widespread due to factors such as sea level rise, the opening of new shipping lanes due to melting ice caps, and changing global trade patterns, which need to be addressed.

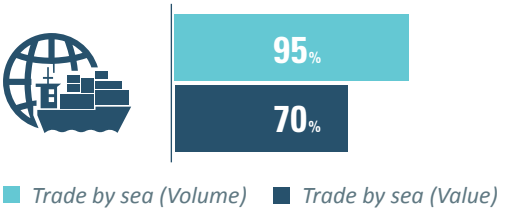
MARITIME TRADE IN INDIA

Chapter 2

2.1. Overview

India is a major maritime nation by tradition owing to its strategic location on the global maritime map and favourable geo-political circumstances. Over 7,500 kilometres of coastline in 9 maritime states, 2 union territories and island territories, and more than 200 ports make India an attractive maritime trade destination. The extensive coastline and abundant number of ports act as a gateway for growing international trade in India, which currently ranks 17th among the maritime countries.

India's trade sector is witnessing considerably high long term growth trend driven by the sustained growth of GDP. This trend is expected to persist as India continues to attract global capital inflows into the manufacturing and infrastructure sectors, and cement trade tie-ups with the US, the EU, China, and South-East Asian and South Asian trade blocs. International and domestic trade volumes are expanding rapidly and its impact is evident in the burgeoning traffic volumes of the shipping and port sector.



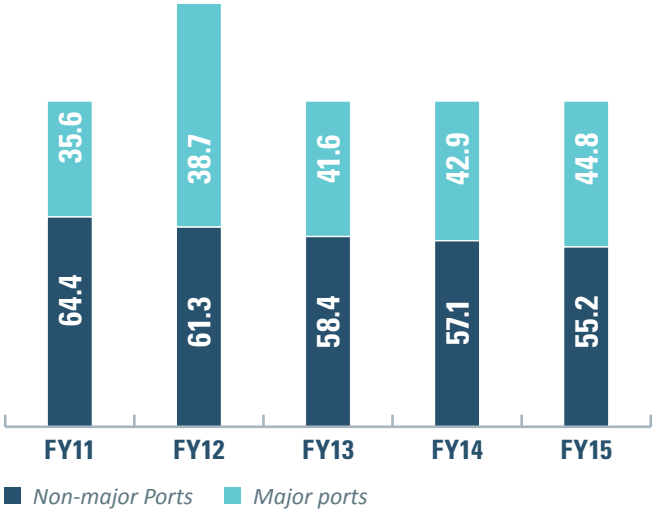
Source: India Transport Report 2015

Fig. 2.1. Maritime Trade in India

The importance of the maritime sector in the economic expansion of India can be gauged by the fact that maritime transport handles 95 per cent of the country's merchandised trade by volume and 70 per cent by value (**Fig. 2.1**). Indian maritime trade accomplished a total cargo throughput of 1052.52 million tonnes reflecting an increase of 8.2 per cent in 2013-14, compared to a growth of 4.1 per cent in the previous year. The cargo profile in the same period was dominated by two commodities, POL (petroleum, oil and lubricants), and coal, accounting for more than half of the total cargo throughput.

2.2. Trade through Ports

Maritime trade in India is carried out through 12 major ports (equally distributed between the eastern and the western coastline of India) and around 200 non-major



Source: Review of Maritime Transport 2015- UNCTAD

Fig. 2.2. Share of Major and Non-major Ports in Maritime Trade, 2014-15 (Percentage)

ports. The contribution of non-major ports against major ports in the total cargo throughput has been on an upward trend, its share being almost equal to major ports in the year 2014-15 (**Fig. 2.2**).

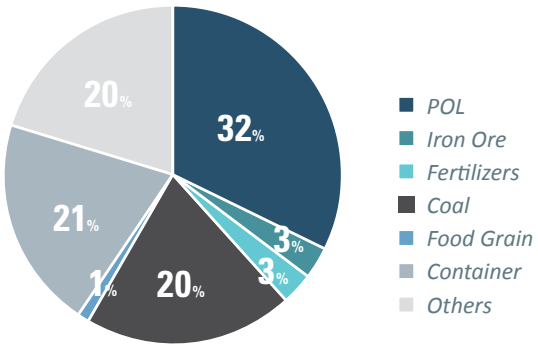
Port	Tonnage, 2014-15 (MT)	Percentage growth from 2013
Kolkata	46.29	11.90
Paradip	71.01	4.40
Vishakapatnam	58.01	-0.90
Ennore	30.25	10.70
Chennai	52.54	2.80
VOCPT	32.41	13.20
Cochin	21.60	3.40
New Manglore	36.57	-7.10
Marmugao	14.71	25.30
Mumbai	61.66	4.20
JNPT	63.80	2.40
Kandla	92.49	6.30
Total	**581.35**	

Source: Indian Ports Association

Table 2.1. Freight Volumes and Growth Rates at Major Ports

2.2.1. Trade through Major Ports

The growth in cargo handled at major ports was 4.7 per cent in 2014-15 as compared to 1.8 percent achieved in 2013-14. The cumulative throughput of all the major ports reached a figure of 581.33 million tonnes by 2014-15, with Kandla handling the largest share (16 per cent) and Marmugao handling the lowest share (2 per cent) of the total freight. Kandla, Paradip, JNPT, Mumbai and Vishakapatnam together handled 60 per cent of the throughput by major ports by the end of 2014. **Table 2.1** provides the list of major ports along with traffic and growth rates for the year 2014-15.



Source: Annual report 2014 -Ministry of Shipping

Fig. 2.3. Freight by Cargo Type at Major Ports - 2014

In terms of composition of cargo handled at major ports in 2014, the largest commodity group (in terms of share in percentage of total cargo handled) was POL at 32.5 per cent, followed by container cargo at21 per cent (**Fig. 2.3**). Energy imports, consisting of POL and coal, constituted about 53 per cent of the total cargo traffic handled at India's major ports. The third largest cargo type at major ports was container cargo, which stood at 7.96 million TEUs in 2014-15, displaying 4.2 per cent growth from the previous year.

2.2.2. Trade through Non-major Ports

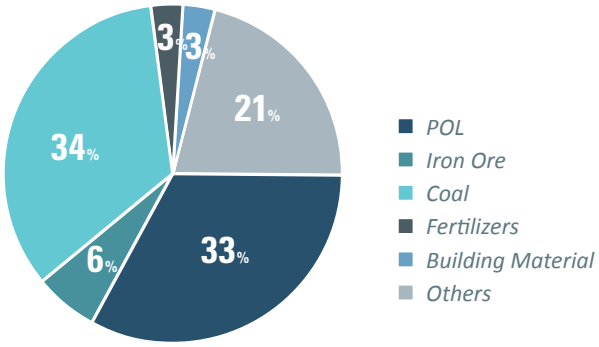
The cargo throughput handled at non–major ports surged by 13 per cent in 2014-15 as against 7.5 per cent achieved in the previous year. Non-major ports handled approximately 471.16 million tonnes, which formed 45 per cent of the total maritime freight traffic of the country during 2014-15. Further growing involvement of non-major ports in handling cargo traffic has helped alleviate the congestion at major ports to a considerable extent. The state-wise distribution of non- major ports along with their

State	No. of Non - major Ports	Tonnage (MT) 2014 - 15	**Percentage** of Total Traffic
Gujarat	42	336.09	71.32
Maharashtra	48	27.30	5.8
Andhra Pradesh	12	83.44	17.7
Goa	5	0.70	0.1
Tamil Nadu	15	0.83	0.1
Karnataka	10	0.65	0.1
Other states/ UT	55	22.13	4.7
Total	**187**	**471.19**	**100.00**

Source: Ministry of Road Transport and Highways

Table 2.2. State-wise List of Non-major Ports with Freight Volumes and Share in Total Traffic

throughput and growth percentage is given in **Table 2.2**. The growth in the quantity of cargo handled at non-major ports has been primarily driven by growth of private ports in Gujarat and Andhra Pradesh. Mundra and Pipavav in Gujarat accounted for 73.6 per cent of total volume handled by non-major ports, followed



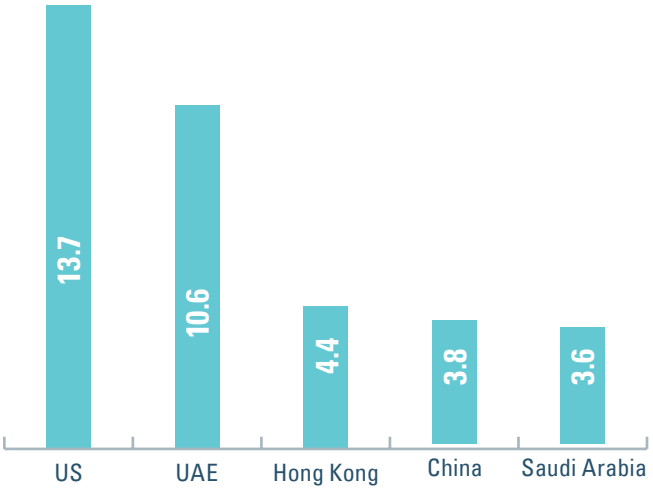
Source: Ministry of Shipping

Fig. 2.4. Freight by Cargo Type at Non-major Ports -2014

by Andhra Pradesh, which accounted for 17 per cent. Cumulatively, these two states comprised more than 90 per cent of total cargo shipped via non-major ports during 2014-15. As far as cargo composition is concerned, POL and coal accounted for more than two-thirds of the total cargo handled at non-major ports during 2014-15 (**Fig 2.4**).

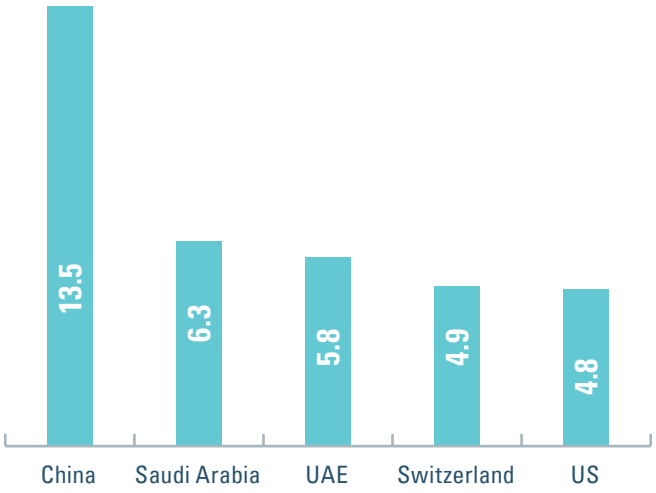
2.2.3. Destination and Source of Cargo at Indian Ports

Growth in maritime trade has continually helped India strengthen trade relations with its partners, with consistently growing volumes translating into more traffic between source and destination regions. As of 2015, USA has been the primary destination (**Fig. 2.5**) whereas China has been the single largest source of cargo handled at Indian ports (**Fig. 2.6**). At a regional level (**Fig. 2.7**), the EU absorbs the highest share (16 per cent) of Indian exports whereas more than 20 per cent of imports to India originate from North-East Asian countries.



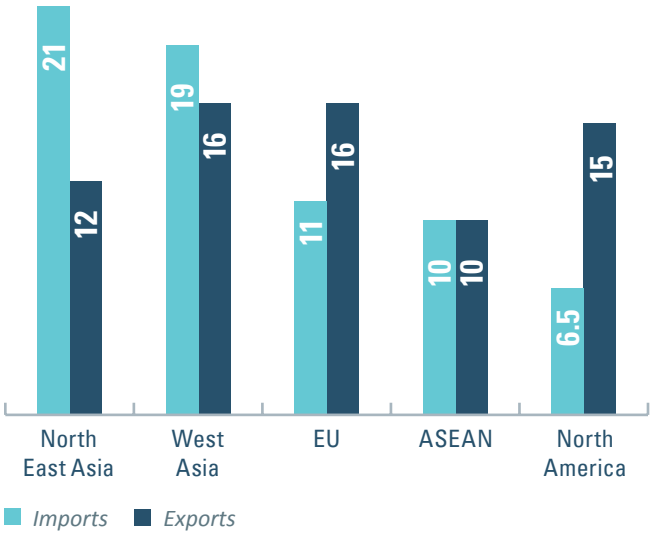
Source: Ministry of Commerce and Industries

Fig. 2.5. Top 5 Destinations of Export (Percentage)



Source: Ministry of Commerce and Industries

Fig. 2.6. Top 5 Sources of Import (Percentage)



Source: Ministry of Commerce and Industries

Fig. 2.7. Top 5 Regions of EXIM Trade with India (Percentage)

2.3. Review of Traffic and Capacity Projections

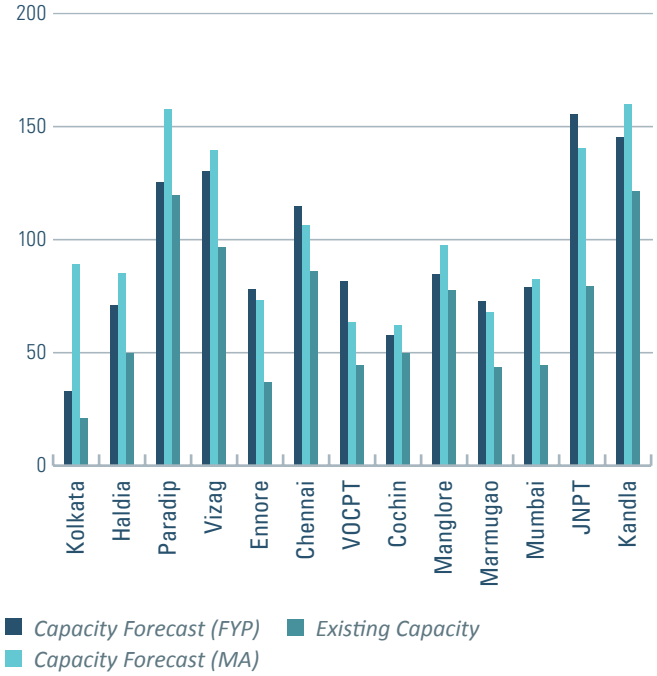
The projections of traffic made in the 12th Five Year Plan seem to be achievable at the existing growth rate, however, Indian ports will be stretched to their limits if they are to meet the projections (most likely estimations) of traffic in the Maritime Agenda 2020, a perspective policy document for development of maritime sector.

Review of key policy documents like 12th Five Year Plan and Maritime Agenda 2020 reveals that major ports will probably encounter more challenges, while trying to pursue these targets, if they continue to operate at the existing growth rate i.e. 4.7 per cent. Non-major ports on the other hand are well placed to achieve the target if traffic continues to grow at the current rate of 13 per cent.

Traffic handling capacity of major ports is far below the projected levels. In order to meet the cargo handling capacity estimations provided in the 12th Five Year Plan and Maritime Agenda, 2020 respectively, major ports will have to increase their capacity by 30 per cent and 45 per cent by 2016-17 (**Fig. 2.8**).

Source: Annual Report 2015-Ministry of Shipping

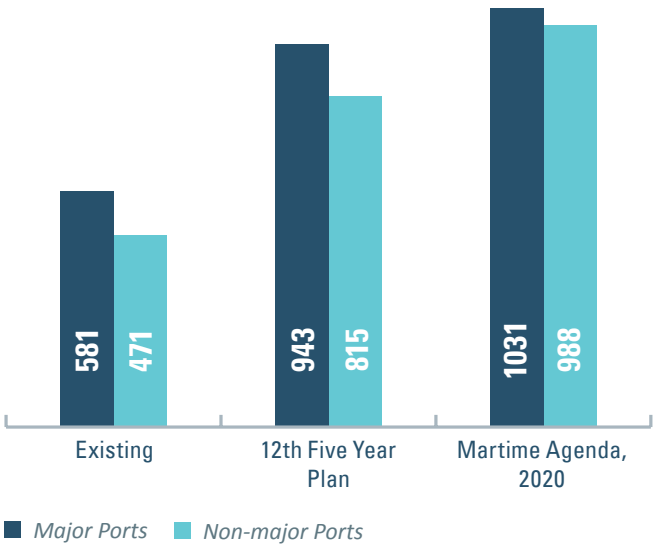
Fig. 2.8. Capacity Projections at Major Ports by 2017 (MT)



Source: Indian Ports Association, 12th FYP, Maritime Agenda 2020

Fig. 2.9. Comparison of Capacity Projections at Major Ports for 2017 (MT)

(**Fig. 2.9**) provides a comparison of existing cargo handling capacities of all the major ports with the projections for 2017. As can be seen, Mumbai followed by Paradip and Chennai are most likely to meet the capacity projections whereas JNPT, Marmugao and Kolkata need to almost double their productivity to achieve the required numbers.



Source: Indian ports Association, 12th Five Year Plan, Maritime Agenda, 2020

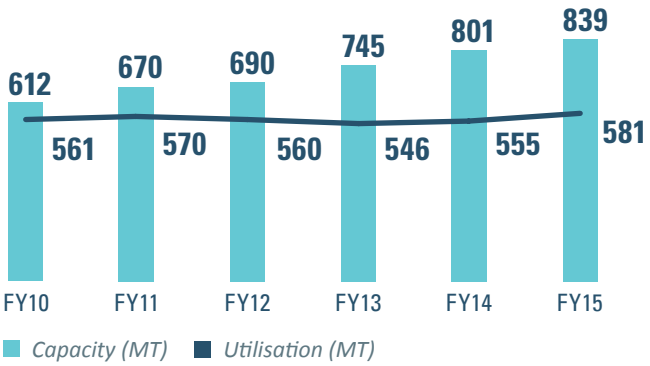
Fig. 2.10. Comparison of Traffic Projections at Major and Non-major Ports by 2017 (MT)

Source: Indian Ports Association, 12th Five Year Plan, Maritime Agenda 2020

Fig. 2.11. Comparison of Traffic Projections at Major Ports for 2017 (MT)

As far as traffic is concerned, (**Fig. 2.10**) provides a comparison of the current status at major and non-major ports vis-à-vis projections for 2017. The projections in the Maritime Agenda, 2020 for the year 2016-17 are slightly higher than those given in the 12th Five Year Plan. Major ports are handling more than 60 per cent of projected traffic (as per 12th Five Year Plan) and need to add the remaining 40 per cent in 2 years. Non-major ports, on the other hand are handling half of the projected traffic. As many as 6 major ports have to double their traffic in two years to meet the projected levels for 2017 (**Fig. 2.11**).

As overall volume of maritime trade in India is increasing, the cumulative capacity of major ports remain below the required levels. Ironically, even at these inadequate levels of capacity the major ports in India remain underutilised. A comparison of the port capacity and traffic handled over a period of six years (2010-2015) reveals that major ports have remained underutilised throughout this period and the gap between port capacity and traffic handled has been consistently widening (**Fig. 2.12**).



Source: Indian Brand Equity Foundation (IBEF)

Fig. 2.12. Capacity Utilisation of Major Ports, 2014-15

2.4. Regulatory Environment

Major ports in India are come under the purview of the central government, whereas non-major ports are operated by state authorities. All the Indian ports are administered under the Indian Ports Act, 1908, whereas major ports are additionally administered under by Major Port Trust Act, 1963. The Ministry of Shipping (the Ports Wing under the Department of Shipping) covers all development and management aspects of the major ports.

The Major Port Trust Act was amended in 1996 and 1997 to give effect to the policy guidelines issued as a measure to secure private participation in port restructuring in the country. The 1996 policy guidelines entailed all upcoming ports to be set up as companies under the Indian Companies Act, 1956 and the existing Port Trusts to be gradually corporatised and set up as companies. Ennore, near Chennai, was the first port to be set up as a company under the Indian Companies Act.

The policy guidelines also provide for an independent tariff regulatory authority. Accordingly, Tariff Authority of Major Ports (TAMP) was incorporated in April 1997 to regulate tariff at major ports. Currently the role of TAMP includes regulating both vessel-related and cargo-related tariffs as well as regulating rates for lease of properties in respect of major port trusts and the private operators located therein. Despite being a regulatory body the TAMP has limited autonomy, being largely under the central government's control; its lack of power to regulate performance and select private parties, for contracts and other services, implies regulatory limitations.

2.5. Upcoming Projects

Low level of productivity and inefficient procedures make the Indian ports uninviting for global players. The sector faces impediments in the form of insufficient infrastructure, poor logistics, primitive technology, cumbersome regulatory systems and plaguing labor issues. In the presence of these challenges, the ports face the problem of underutilisation vis-à-vis cargo handling potential resulting in less throughput. Modernisation and mechanisation of ports as well as operational streamlining, therefore, is imperative for the growth of the maritime sector in India.

Acknowledging the challenges and pressures faced by the Indian maritime sector, the Government of India (GOI) has already initiated projects directed towards coastal shipping, inland waterways, ship building, capacity additions and efficiency in port operations. Some of the recent developments for the revival of the maritime sector in India has been the introduction of two flagship projects by the central government: Sagarmala and Coastal and Inland Waterways Transport.

2.5.1. Sagarmala Project

Sagarmala (String of Ports) project has been conceived to facilitate and promote port-led direct and indirect development, aiding the maritime sector to overcome its challenges. The project, approved in the beginning of 2015, envisages furthering the growth of the maritime sector in India through an investment of USD 11.6 billion . The investment will materialise into the setting up of coastal economic zones, new major ports, two hub ports, fish harbours as well as modernisation, mechanisation and computerisation of ports. The project is estimated to increase the cargo traffic in India by at least three times by 2020. With its progress, it is also estimated to give a boost of 2 per cent to the country's GDP by 2020.

Sagarmala Project envisages setting up of coastal economic zones, new major ports, two hub ports, fish harbours as well as modernisation, mechanisation and computerisation of ports.

The Sagarmala project is expected to address the slow growth rate of major ports - which in spite of achieving overall growth during 2009-10 to 2014-15 have not been able to surpass the previous high of 5.7 per cent achieved in 2009-10 - by enhancing the capacity of existing major ports, which entails investing in adequacy and modernisation of cargo handling equipment, optimal transport modal mix, extended hinterland linkages, high penetration of coastal and inland shipping, and deep drafts at ports.

The project will also improve and advance the coastal identity in the selected states and union territories, by facilitating the setting up of industries and manufacturing centres closer to ports for easy cargo movement. This will also provide an incentive for ancillary businesses and industries to grow in the coastal areas.

Hinterland connectivity and efficient evacuation of cargo are other areas which the project envisions in order to elevate India's port operations to the levels comparable with the best ports across the globe. Further special-purpose company, named Indian Port Rail Corporation Ltd, with equity participation by major public port trusts and the state-owned Rail Vikas Nigam will be formed as part of the Sagarmala project, in order to develop new intermodal rail infrastructure for better port connectivity.

2.5.2. Coastal and Inland Waterways Transport (IWT)

The future of the port sector in India hinges a lot on coastal movement and inland waterways. Considerable economic growth in India over the past decade has led to congested roads and an overburdened railway network. The enhancement of IWT is seen as an important remedial measure towards easing the pressure on roadways and railways.

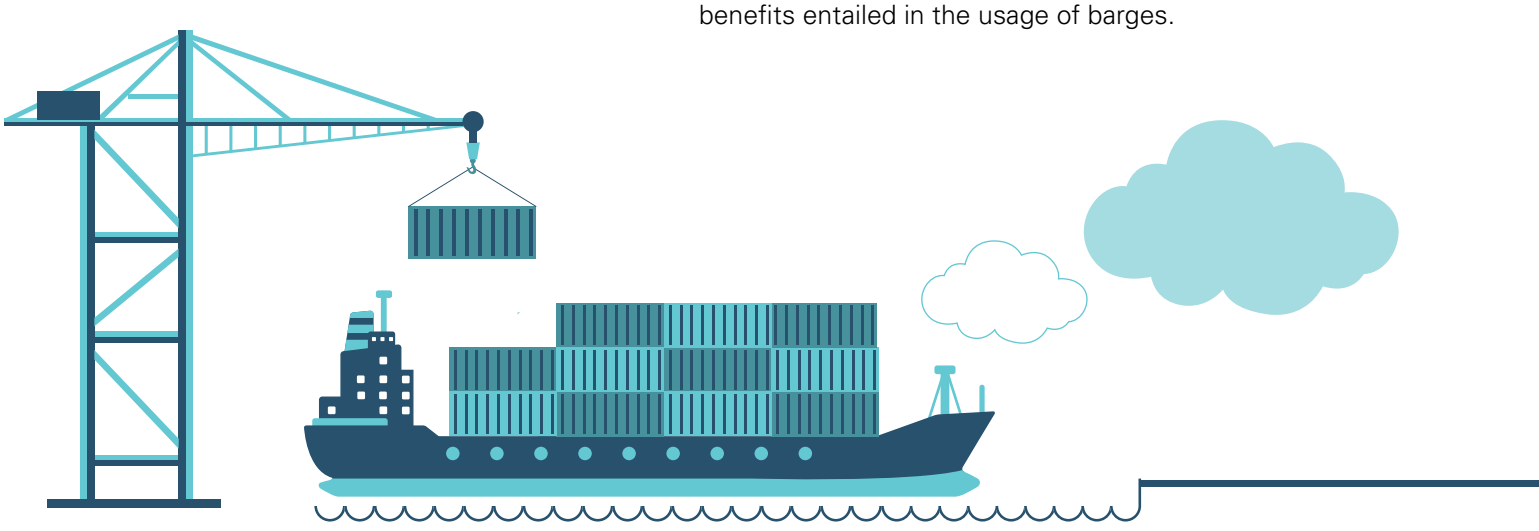
Mode of Transport	Operating Cost / Tonne-Km (INR)	Fuel Efficiency Tonne/Km/Litre (INR)
Barge	0.75	105
Train	1.18	85
Truck	1.51	24

Source: IWAI, Annual Report 2015, Ministry of Shipping

Table 2.3. Comparison of Operating Costs in Different Modes of Transport

India is blessed with 7,551 kilometres of coastline and about 14,500 kilometres of navigable inland waterways. Of the navigable inland waterways, 4,503 kilometres are National Waterways (NW). Despite the cargo movement potential through these waterways, coastal shipping and inland waterways account for only 7 per cent (6.5 per cent coastal shipping and 0.5 per cent inland waterway transportation) of the country's total domestic freight (on a tonne-kilometre basis). In contrast global maritime leaders like Netherlands and China transport 47 per cent and 42 per cent of freight using this mode respectively.

Over the years, a major deterrent rendering the Indian ports uncompetitive in the global market, has been increased transportation costs (inclusive of fuel costs). Therefore, increasing the share of waterways in freight transport is the key to achieving a more balanced modal mix. IWT is far more efficient as a mode of transportation than either road or rail, considering that a single mid-sized barge has dry-cargo handling capacity equivalent to 50 trucks or over 10 railcars. **Table 2.3** provides a comparison of operating costs and fuel efficiencies of three transport alternatives i.e. barges, trains and trucks, clearly indicating the cost benefits entailed in the usage of barges.



Realising this potential of IWT, the government has approved the enactment of central legislation for declaring 101 additional inland waterways as National Waterways (NWs) for navigation. Furthermore, to develop it as an alternative/complementary service in a multi-modal transport network, the government has proposed to set up an Integrated National Waterways Transport Grid which covers mainly five NWs.

The integrated waterways transport grid would include the development of the national waterways with at least 2.5 meter Least Available Depth (LAD), upgradation/setting up of priority terminals and establishing road, rail and port connectivity, wherever feasible.

Further, successful implementation of these projects would require appraisal of the regulatory environment governing the maritime sector in India. Infrastructural adequacy coupled with favourable regulatory environment holds the potential to sufficiently strengthen Indian maritime trade's growth trajectory, and thereby, successful implementation of the same is imperative in the times to come.

2.6. Way Forward

Development of the maritime sector is critical for the growth of trade in India. Capacity expansion in ports, merchant shipping, ship building/ship repair and inland water transport is being taken up through several developmental activities across the maritime states in the country. The Maritime Agenda (2010-2020) offers the required framework for these developments by providing estimated traffic projections and capacity additions at the ports up to 2020. Based on estimated growth in traffic, it has projected capacity enhancement of 3,130 tonnes by 2019-20. To achieve these numbers, the government has taken significant measures to create opportunities for investment and shape up the future of maritime sector in India. The maritime sector has witnessed certain positive trends in the recent years, especially the developments that have taken place with the GOI encouraging private investments in the port sector through the introduction of various initiatives. The paths are being cleared, and projects are opening up across the logistics spectrum, to achieve the objectives set out in the 12th Five Year Plan and Maritime Agenda 2020. More than 200 projects have already been identified in the maritime sector offering an investment opportunity of USD 15 billion. Some of the major projects and initiatives that are shaping-up the landscape of Indian maritime sector include:

- The Sagarmala project
- Last mile connectivity to ports
- Inland waterways and coastal shipping
- Terminalisation
- Land-lord port model
- Mechanisation of ports
- Public-private partnership
- Development of new ports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ASSESSMENT OF SEA PORTS

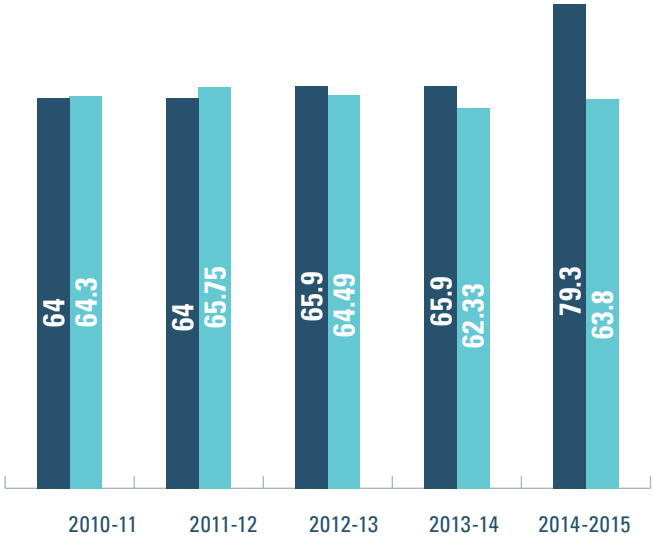
Chapter 3

JAWAHARLAL NEHRU PORT TRUST (JNPT)

Jawaharlal Nehru Port,

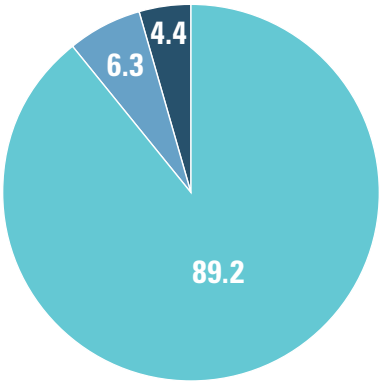
located in Maharashtra, is the biggest container port in India, handling around 60 per cent of the country's containerised cargo. The port has a vast hinterland covering the whole of Maharashtra and major parts of northern and central India. JNP serves as the hub port on the western coast of India, and is ranked 32nd among the top 50 container ports in the world. The land area in possession of the JNPT measures 2,584 hectares.

Year-on-Year Traffic



Traffic Handled at JNPT (in MT)

Cargo Profile



Cargo Handled by JNPT in 2014-15 (Percentage)

Infrastructure

Berths	Draft (m)	Length (m)
10 Berths	10-14	280-712

Cargo Handling Equipment

Equipment	Number	Capacity per Crane (Tonnes)
RMQC	30	40-61
RTGC	87	40
RMGC	11	40-65

Container Cargo Traffic (TEUs)

2013-2014	4,162,000
2014-2015	4,467,000

Storage

Particulars	Storage Capacity
Liquid Tank	750000 MT
Warehouse Area	1197260 TEU
Open Area Storage	875000 TEU

Connectivity

Road :
NH-4B, NH-17, SH-54

Railway :
14-15 rakes per day

ICD :
33 ICDs including Tughlakabad

3.1. Jawaharlal Nehru Port Trust (JNPT)

3.1.1. Challenges

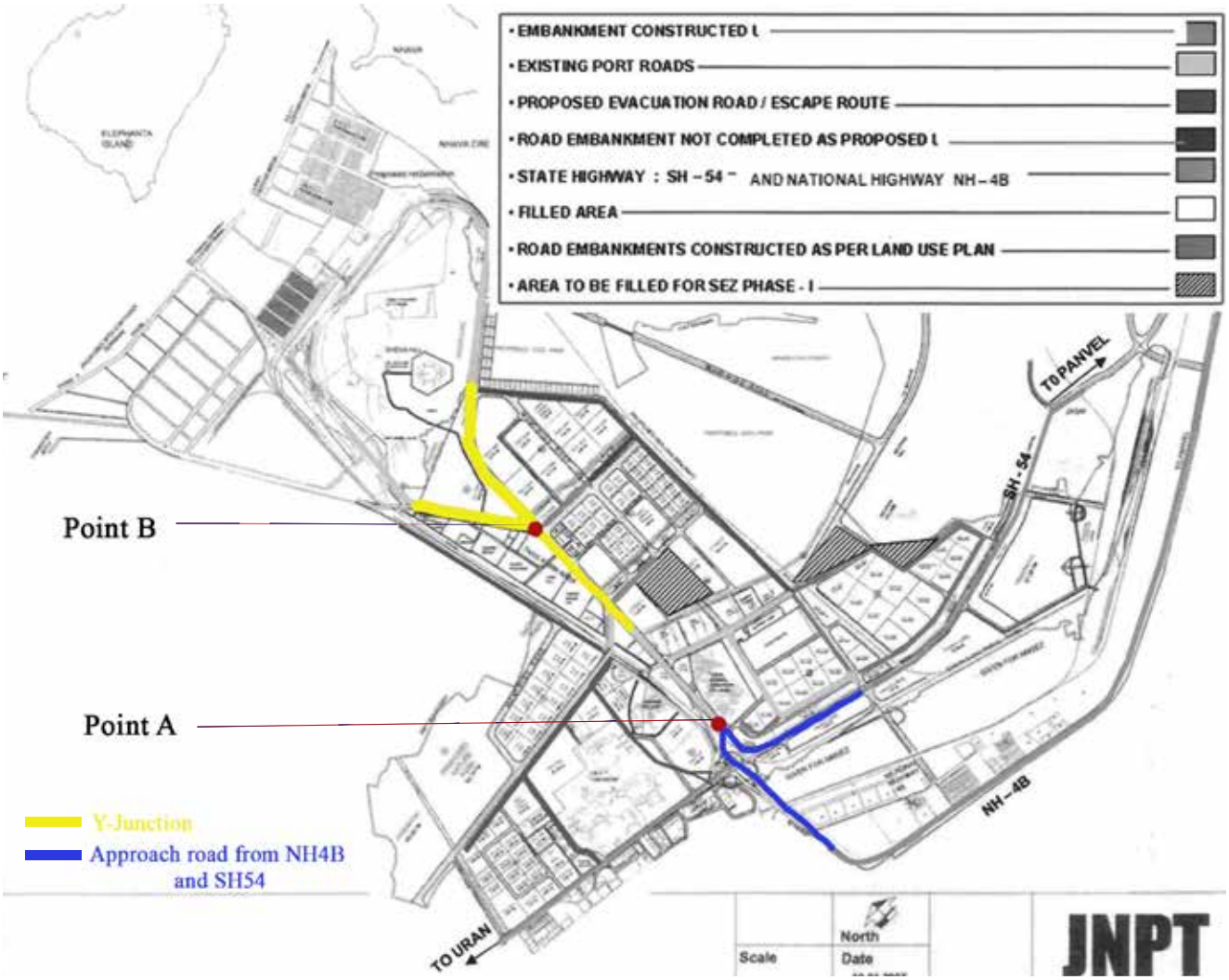
Major Issues Faced	
Road Congestion	• Heavy congestion at the Y-junction and in the service lane near port gate • Inter-terminal movement of trucks not in operation for exports • Construction of fourth container terminal adding to the number of vehicles on the approach road • Increased transaction costs for traders
Insufficient Draft for Handling Mother Vessels	• The highest available draft of 14 metres at the port is not enough for mother vessels. • Shift of port preference by mother vessels to the deep-water ports of Gujarat • Failure to meet container handling targets in 2013-14 and 2014-15
Frequent Breakdown in Message Exchange Systems	• Frequent breakdown faced by Indian Customs EDI system (ICES) and the Port Community System (PCS) • Resultant delays hampering overall operations and adding to congestion
Need for More Efficient Scanners	• Time consuming scanning process through the use of existing mobile scanner, leading to delays • Existing scanners being able to scan through a maximum thickness of 180mm, which is not sufficient for all container variants • Scanning list is generated two days after filing of IGM
Paucity of Equipment at Rail Yard	• Increased time consumption in the process of stacking and de-stacking of containers as per terminals at the rail yard due to paucity of equipment, leading to increased train turnaround time
Lack of Flexibility in Choosing CFS	• Monopoly of the shipping line in choosing private CFS

JNP is India's largest container port- spread over 2,987 hectares of land. It has three terminals, namely, Jawaharlal Nehru Port Container Terminal (JNPCT), Nhava Sheva International Container Terminal (NSICT) and Gateway Terminals India Container Terminal (GTICT), with a cumulative quay length of 1992 metres. Preceded by a slight decline in 2013-14, JNP has experienced a revival in the annual container traffic handled, with a marginal growth of 2.4 percent in 2014-15.

Slow growth in traffic handled by JNP can be attributed to several issues faced by the port. Excessive congestion at the approach road, particularly at the Y-junction and in the service lanes, has been a chronic issue at the port, which has created serious bottlenecks towards the achievement of its container handling targets. Further, the highest draft offered by the port remains at 14 metres, which has proved to be insufficient to attract mother vessels with a higher DWT of 200,000 - 250,000. The combined effect has been the re-routing of ships to competitor ports such as the Hazira and APSEZ - Mundra (hereafter referred to as Mundra port) ports in Gujarat. The port also faces operational issues such as frequent breakdowns in ICES and PCS, time consuming scanning procedures due to shortcomings in the existing mobile scanner, stacking and de-stacking of containers at the port leading to increased train turnaround time (TAT) of rakes and trucks. Further lack of inter-terminal movement of trucks for exports has led to unwarranted delays. Adverse effects on transaction costs, owing to different transport charges and terms of payment at different CFS can also be noted. The following paragraphs discuss these issues in further detail.

Road Congestion

Congestion at the Approach Road



Source: JNP Annual Magazine, 2014

To enter JNP, vehicles (trailers, trucks, etc.) use either National Highway-4B or State Highway 54. These approach roads coincide at Point A (as depicted) and continue 7.5 kilometres towards a three-way junction, commonly known as the Y-Junction (Point B), which further branches to the three terminal gates of the port, operated by three different operators i.e. Jawaharlal Nehru Port Trust (JNPCT), DP World Pvt. Ltd. (NSICT) and APM Terminals India Pvt. Ltd. (GTICT). The points A and B are the main areas of congestion on the approach road to JNP.

Approximately 70,000 vehicles move in and out of the port every month. Heavy congestion en route to the port is reportedly faced by trucks, sometimes extending to 12 kilometres, thereby leaving trucks stranded for days before they can enter the port. These inordinate delays entail adverse effects for the traders as they have to deal with considerably inflated transaction costs.

Further, frequent instances of transporters informing the CHAs post reaching the pre-port gate at Point A also adds to congestion and ensuing delays, with the trucks blocking the entry passage till the documentation is duly checked and cleared.

With a fourth terminal under construction, the problem of congestion has worsened further because about 200 additional trucks ply on the road everyday carrying construction materials such as cement, sand and steel.

Inter-terminal Movement of Trucks Not Operational

On February 13, 2015, inter-terminal movement of trucks, that is, truck movement within the three terminals of JNP, was sanctioned only for import cargo to facilitate faster container evacuation from the port. This provision has not been extended to trucks entering the terminals carrying export cargo. The sanction of inter-terminal movement was directed towards optimum utilisation of vehicles and reduction in congestion at the terminal gates by allowing trucks to exit through any of the other terminal gates in case of congestion in one. However, the implementation of this scheme needs to be extended to both import and export cargo in order to address the issue of road congestion.

Insufficient Draft for Handling Mother Vessels

The highest draft available at JNP is 14 metres. While this draft is sufficient for feeder vessels, an increase in draft is required for calling mother vessels to the port, which require a draft of 18 metres. The unavailability of such draft at the port has directed these vessels to the deep-water ports of Gujarat, due to which the container business of the port has suffered.

With international trade leaning towards the more economically viable mother vessels, shallow draft has affected JNP's opportunity to become a hub port. As a result of this, Salalah Port (Oman) has developed into a hub port, sending feeder vessels to JNP. This has increased the transit time of cargo, which has blocked working capital and affected freight.

Currently, the port handles around 4.4 million TEUs per month. For the preceding two years, i.e. 2013-14 and 2014-15, JNP has not been able to increase its traffic significantly to maximise capacity utilisation. This further emphasizes the need for a deeper draft to handle mother vessels. If JNP develops into a hub port, the traffic handling could be doubled, leading to increase in revenue for the port.

Frequent Breakdown in the Message Exchange Systems

The Customs EDI System (ICES) and the Port Community System (PCS) face frequent breakdowns. There is a need for these systems to be made more efficient to facilitate communication and transactions at the port. Both these platforms act as single window systems enabling paperless transaction and seamless flow of information between various stakeholders. PCS is also important for tracking movement of trucks within the port, which is imperative to address the issue of congestion. Failure of these systems results in long operational delays ranging from a few hours to an entire day.

Need for More Efficient Scanners

Currently, the port has two container scanners at JNPCT and NSICT—one mobile gamma ray scanner and one fixed X-ray scanner. Only 5-10 per cent of the total containers per consignment are scanned and are picked up randomly by the system. The issue with scanners is three-pronged:

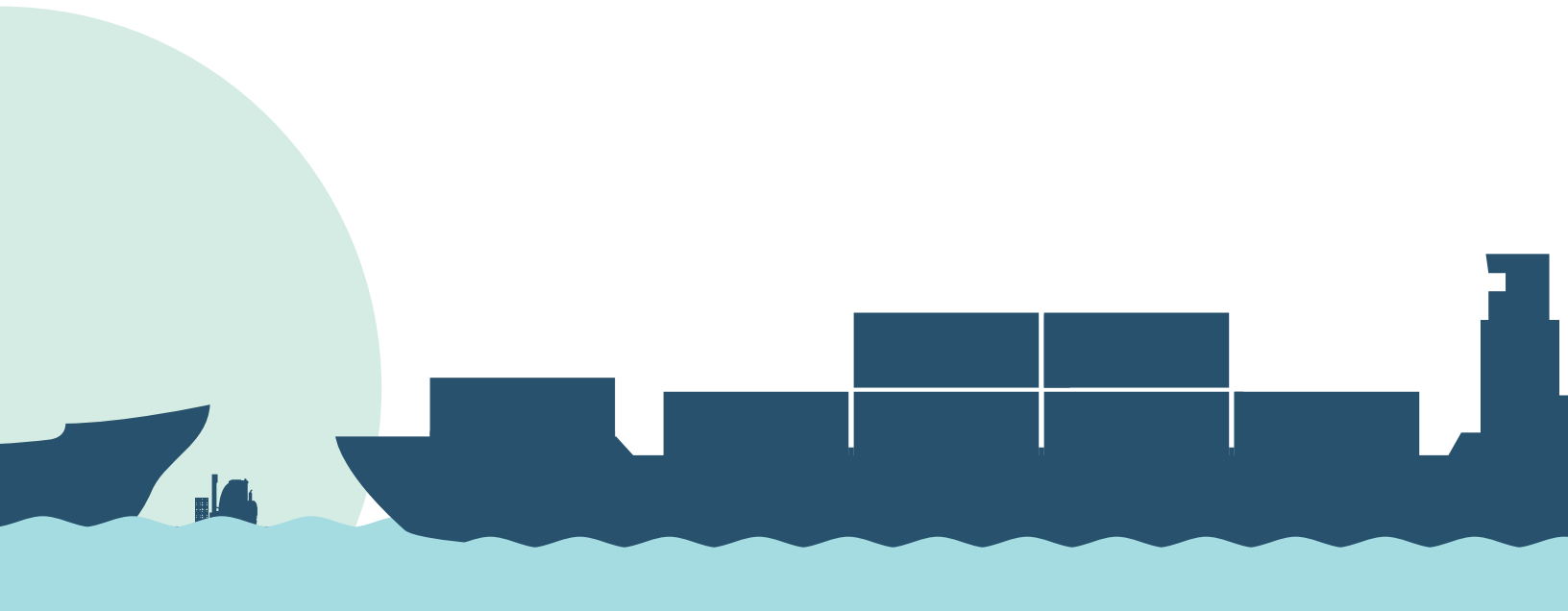
- The mobile scanner takes around 10 minutes to become operational after switching on, and further requires 3 minutes to scan one truck. Due to space constraints, only ten trucks can be lined up at a time for scanning. Thus, it takes around 30-40 minutes to scan ten trucks, thereby making the scanning process time-consuming.
- The scanners can only scan through a maximum thickness of 180 mm, beyond which they fail to show results.
- The scanning list is generated two days after the IGM is filed. By these two days, the containers have already moved out to the CFS. When the scanning list is generated, the containers are brought back to the port, entailing a cumbersome process and also adding to the congestion..
- To meet the growing needs of the port, there is a need for more efficient scanners that can scan all container variants in lesser amount of time.

Lack of Equipment in the Railway Yard

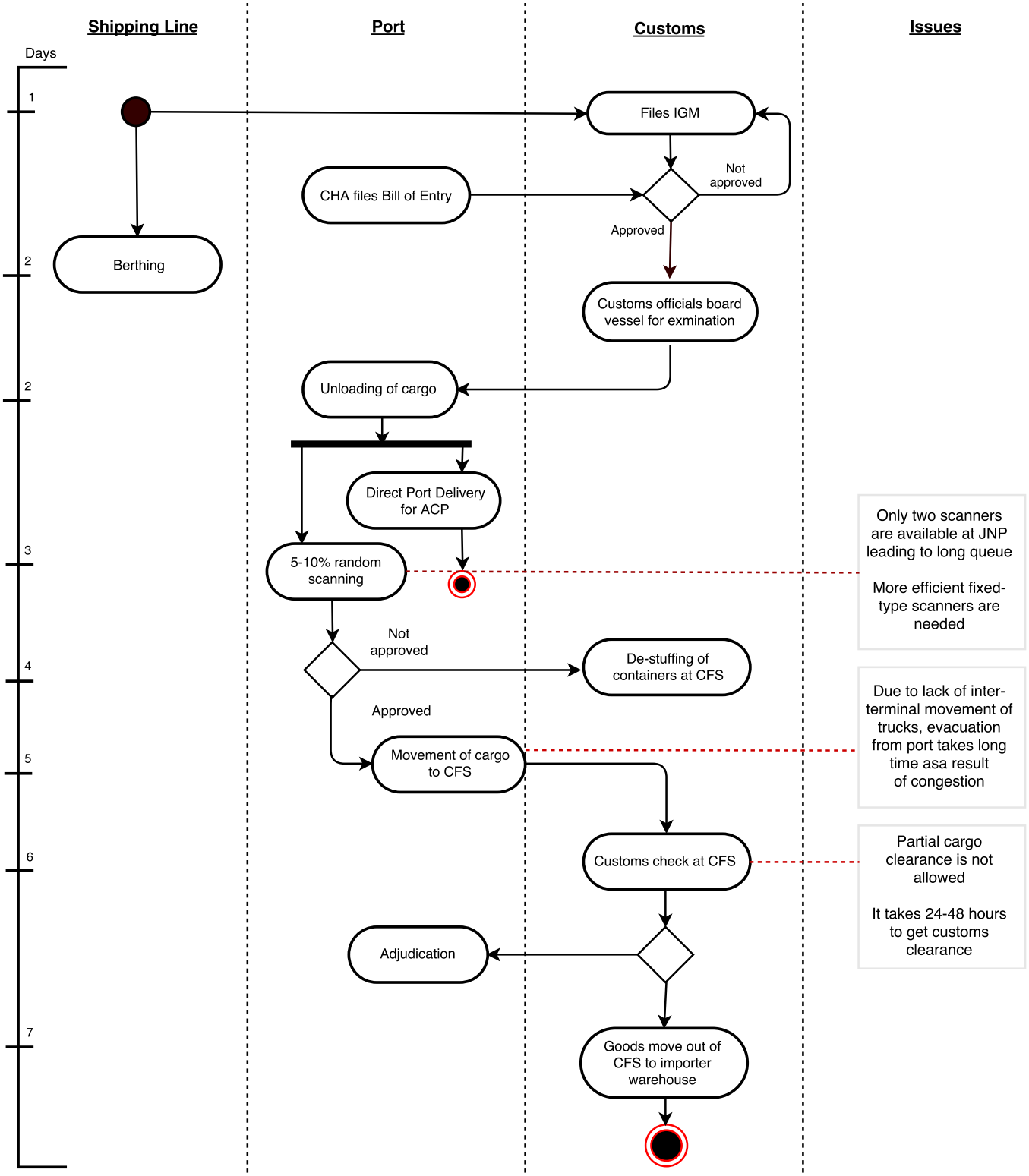
Currently, the train turnaround time (TAT) at JNP is 11-13 hours due to paucity in the quantity of cranes at the railway yard. The root of this issue lies in the contract between the port and the contractor pertaining to revenue share. The contract, negotiated between the port and the contractor, is signed for a fixed number of years on fixed rates. The number of containers handled by JNP varies each year. As the contractor is not permitted to calculate the revenue share with the port as a cost item, he refrains from adding more cranes to handle the growing traffic as it translates to a loss for him. For instance, the revenue share for the contractor from two cranes would be much lower than if he used four cranes. This reduces the efficiency of container evacuation from the rakes, increasing the train TAT. With more number of cranes, train TAT can be reduced to 4 hours.

No Flexibility in Choosing CFS

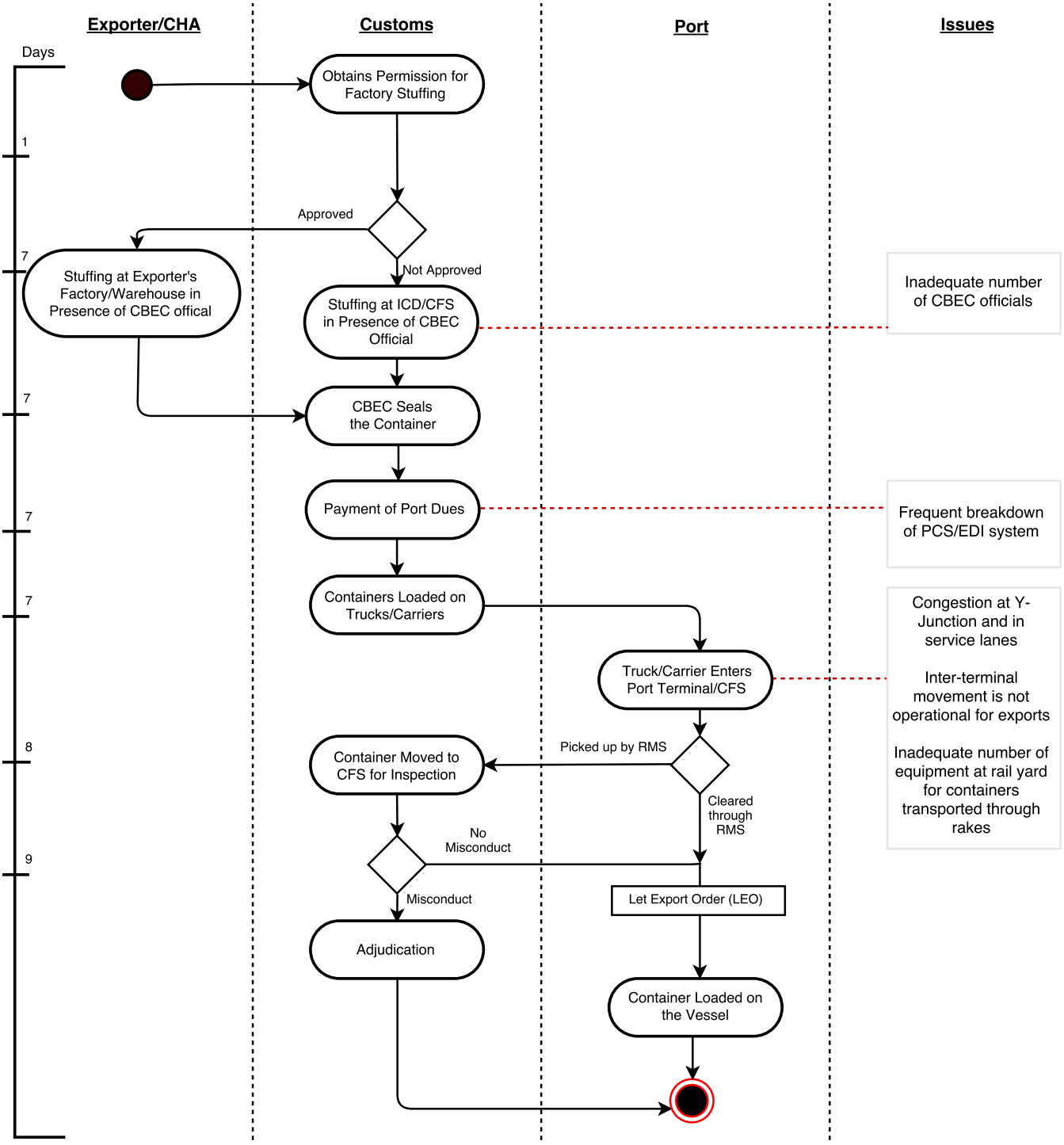
Approximately 32 CFS are located near JNP. The charges of the CFS also vary from each other. For instance, at JNP CFS, the charges are INR 6,000 per container, while a private CFS may charge up to INR 12,000 per container. Two actors are authorised to choose the CFS- the shipping line and the importer/CHA. However, in practice, it is only the shipping line that selects the CFS either due to affiliation or preference. The vehicles for picking up the import containers are also sent by the same CFS at a fixed transportation cost. The importer, in turn, pays higher charges. This practice requires an urgent check as it adds to the cost for the end-user.



Movement of Cargo at JNP - Import



Movement of Cargo at JNP - Export



3.1.2. Plan of Action

Recommendations and Indicative Plan of Action	
Easing Congestion at the Approach Roads	• Two-pronged approach, comprising of infrastructural restructuring and operational efficiency is the way forward • Projects for road widening and construction of flyovers • Creation of 'truck pool' to streamline truck movement • Online tracking of truck movement through RFID and integration of such system with ICES • Automation of truck entry into the port • Facilitation of inter-terminal movement of trucks for export • Ensuring greater availability of trucks • Easing of congestion at port gates through an automated system
Providing Fillip to the Operational Efficiency of Dredging Corporation of India (DCI)	• Evaluation of ways for achieving drafts of 17-18 metres required for mother vessels • Special focus on dredging the approach channel to the container berths • Strengthening the DCI
Installation of More Fixed Scanners	• Installation of more number of container scanners at the port given seamless traffic flow • Introduction of an additional fixed scanner seen as the way forward
Streamlining Logistics Related Operations	• Train TAT needs to be reduced to 4 hours from the current 13 hours • Terminal-wise color coded sorting of containers required • Ensuring timely delivery by contractors to increase overall efficiency

Easing Congestion at the Approach Roads

A two-pronged approach, involving infrastructural restructuring and raising operational efficiency, is the way forward to address the problem of congestion at the approach road to JNP. The following paragraphs aim at analysing both the aspects:

Infrastructural Restructuring

The Planning and Development Division of JNP has fostered infrastructural improvements and invested in a number of projects for road widening and construction of flyovers, such as:

» Widening of NH-4B and SH-54 to 6/8 lanes over a stretch of 43.91 kilometres has been taken up by the National Highways Authority of India (NHAI), which involves investments to the tune of INR 3220.56 Crore.

» Construction of a flyover has been proposed at the Y-junction, which would operate as a separate entry to the terminals.

» Approximately six hectares of land for a parking lot has been allotted to each terminal before the Y-junction. The trucks, instead of waiting on the road, can park at these terminal-specific parking lots while they wait for documents or the vessel.

Some of the other important infrastructural developments can be the following:

» Installation of electronic billboards at the pre-entrance gate and at the parking area to inform the vehicles about the status of the vessel. This would enable regulated movement of the trucks hired for the same consignment.

» Automation of terminal gates through Radio Frequency Identification (RFID) enabled gate passes has also been suggested. This would enable quick entry of vehicles into the port without causing congestion. This will also act as an important security measure for registering the 'time-in' and 'time-out' of the vehicles.

Successful implementation of these projects promises to sufficiently bring down congestion at the port.

Operational Efficiency

The indicative procedural measures which can go a long way in easing the congestion at the Y-junction are as follows:

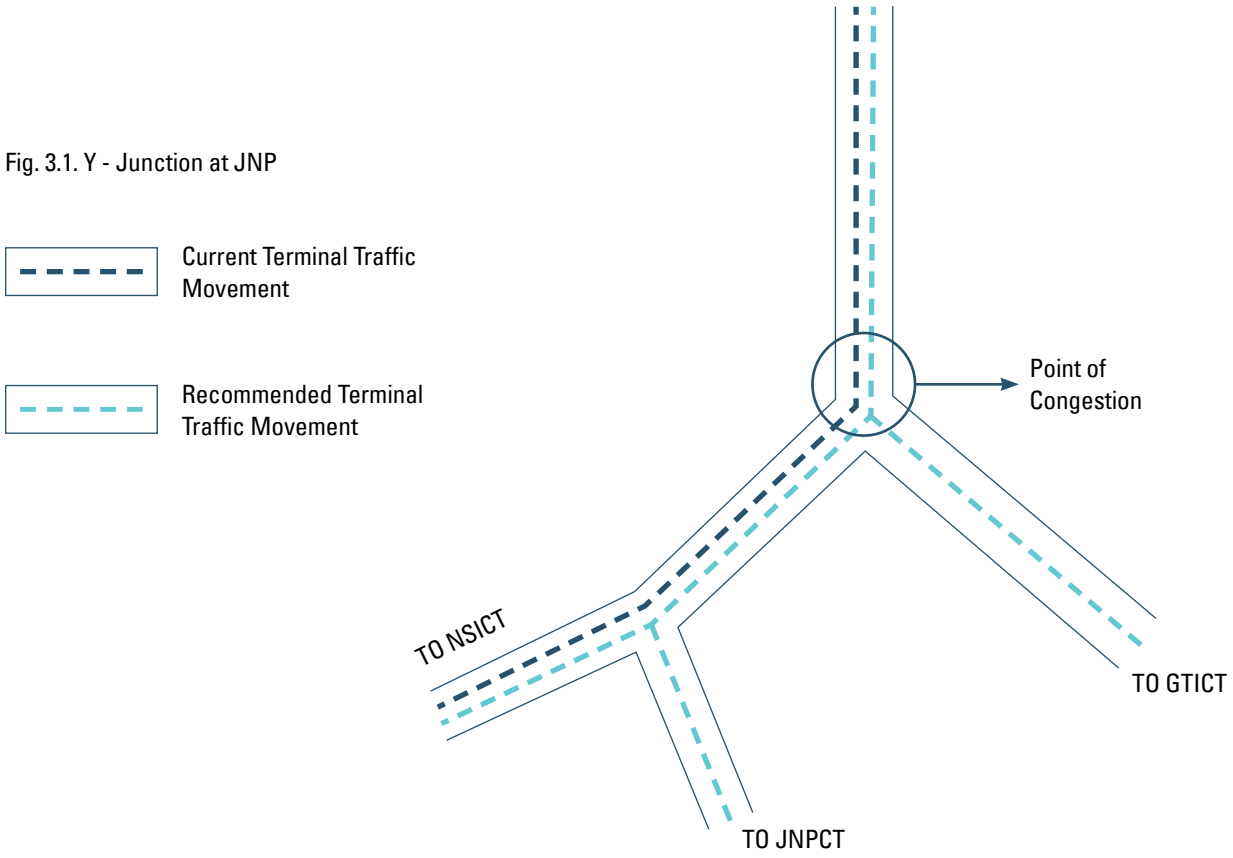
- Presently, the inter-terminal truck movement for exports is not encouraged. There are three separate gates for entrance to the three terminals at JNP. There are instances when the entrance to a particular terminal is congested, while the other two are free. In such situations, entrance of trucks can be allowed through either of the remaining two gates. This would significantly ease congestion at the port gate.
- The process of opening of the gates for entry of trucks into the three terminals needs to be supported with online tracking of truck movement so as to ease out any procedural confusion that may arise. Further, linking such a system with ICES will help create a single window for efficient monitoring.
- With a fourth container terminal under construction, the traffic at the approach road has increased. The port should consider using the minor jetties adjacent to the fourth terminal instead of the approach road for transport of vehicles and containers.
- A 'truck pool' needs to be created with standardised charges such that each truck carrying export containers into the port will also be allowed to carry other containers out of the port. This would ease the congestion at the port by streamlining the efficiency of the trucks/trailers.

Providing Fillip to the Operational Efficiency of Dredging Corporation of India (DCI)

The current 14 metre draft, which is the maximum on offer at JNP, is not adequate for accommodating the mother vessels of higher DWT. These vessels require a minimum draft of 18 metres. For Indian ports, the demand of dredging is very high due to the following reasons:

- Increasing focus of the government on making India a global transshipment destination
- Drive to increase the EXIM capacity of ports
- Consistent requirement of draft maintenance - through dredging - at ports due to siltation

Fig. 3.1. Y - Junction at JNP



» Expansion of ports through addition of new berths and terminals

» Emphasis of the government on coastal shipping and developing inland waterways

There is an urgent need to make DCI stronger because draft is a perennial issue at all major ports. Possible alternatives to improve the dredging scenario can be the enabling of more private players to provide dredging services in India, or encouraging DCI to procure more dredgers and increase capacities.

Installation of More Fixed Scanners

Fixed scanners should be installed at all the three terminal gates such that vehicles carrying containers can simply pass through. This will result in 100 per cent scanning, speedy clearance of cargo and reduction in instances of calling a container back from the CFS, thus saving trading costs.

Per hour output of a fixed scanner is comparatively much higher, and therefore is expected to be an important alternative, given the growth in traffic at the port.

Particulars	Mobile Scanner	Fixed Scanner
Scanning Method	Subject is static and scanner moves on wheels by a vehicle	Subject drives through the scanner
Throughput	20 trucks per hour	30-180 trucks per hour (depending on design)
Approximate Time Taken to Scan One Truck	3 minutes	20 seconds

Table 3.1. Operational Aspects: Mobile and Fixed Scanners

Streamlining of Logistics Related Operations

a. Ensuring Efficient Delivery by the Contractor: The port needs to ensure that the contractors deliver required equipment efficiently at the stacking yard. Penalty must be imposed on contractors failing to meet the targets. This would ensure efficiency and faster TAT for rakes.

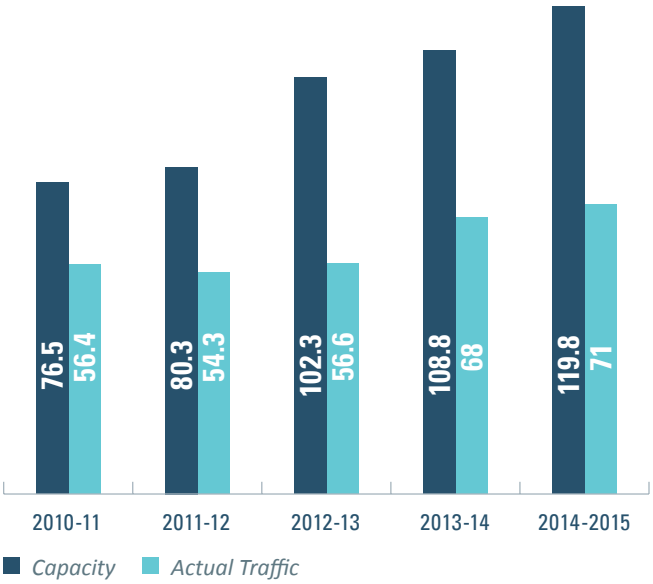
b. Introduction of Color Coded Stickers on Containers: Random stacking of containers at the yard leads to delays in container movement while evacuating. The ICDs should send containers on the basis of terminals, preferably with color coded stickers on containers, so as to enable speedy stacking of containers at the respective terminals.

PARADIP PORT TRUST (PPT)

Paradip Port Trust

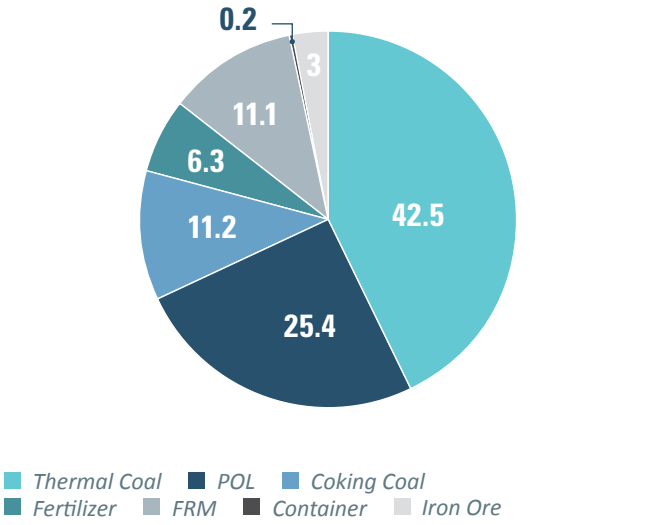
is a major port in the state of Odisha. The Port mainly deals with bulk cargo. Its hinterland consists of Odisha, Jharkhand, Chhattisgarh, West Bengal, Madhya Pradesh and Bihar. Paradip port enjoys the advantages of soft underwater soil, which can be deepened to any depth as per requirements. The land area in possession of PPT measures 2,583 hectares.

Year-on-Year Traffic



Traffic Handled at PPT (in MT)

Cargo Profile



Cargo Handled by PPT in 2014-15 (Percentage)

Infrastructure

Berths	Draft (m)	Length (m)
10 Berths	11.00 – 14.50	200-245

Cargo Handling Equipment

Equipment	Number	Capacity per Crane (Tonnes)
Wharf Cranes	2	20
Mobile Harbour Cranes	5	60-100

Container Cargo Traffic (TEUs)

2013-2014	9,000
2014-2015	4,000

Storage

Particulars	Storage Capacity
Transit Shed	9700 sq. m.
Warehouse Area	7700 sq. m.
Open Yard Stacking Area	20,29,750 sq. m.

Connectivity

Road : **NH-5A, SH-16**

Railway : **Double Line Railway**

ICD : **Balasore (203 Km)**

3.2. Paradip Port Trust (PPT)

3.2.1. Challenges:

Major Issues Faced	
Issues Related to Berthing	• Frequent cases of pre-berthing detention at the port leading to unnecessary delays and additional costs for the shipping lines • Inadequacies in the berthing policy and low levels of mechanisation seen as major impediments • Delays in construction of new berths • Lack of berths with adequate draft for large vessels • Length of berths not enough to accommodate all kinds of vessel combinations (combination of two vessels of different sizes) • Low evacuation capacity of cranes and grabs in use • Priority berthing principles including the berthing principle of Minimum Guarantee Tonnage (MGT) translating to long pre-berthing detention and heavy demurrage • Berthing Policy - a major deterrent for smaller players and a threat to the competitiveness of the port in the longer term
Delays in Rake Evacuation	• Shortage of rakes for evacuation • Low productivity leading to vessel detention and increased congestion at the port • Manual loading of cargo on rakes instead of more efficient mechanised alternatives such as the silo system
Undiversified Cargo Profile	• Monopoly in handling bulk cargo • Lack of diversification of cargo profile • Lack of focus towards container handling • Lack of adequate infrastructure for cargo diversification
Frequent Strikes by Worker Associations/Labour Unions	• Frequent unrests among port workers, stevedores, transporters and other worker groups • Unrests lead to hindrances in mechanisation process, operational delays, productivity losses and increased costs
Higher Operational Costs	• Excessive cargo handling charges • Frequent delays related to berthing, cargo loading and unloading adversely affecting overall cost competitiveness
Lack of Laboratory Facilities	• Lack of competent laboratories • Cargo for testing has to be sent to Kolkata, resulting in huge delays, escalated costs and reduced competitiveness of the port
Land Issue	• Difficulty in attaining commercial and residential land in the port area • Lack of real estate near the port and escalations in prices affecting development of private enterprises • Undefined borders • Increased instances of encroachment and unauthorized occupation • Lack of coordination between PPT and the local municipal corporation • Ambiguity over land - a major deterrent towards development of the local economy
Cumbersome Regulatory Clearance Procedures	• Frequent delays and hassles faced in obtaining regulatory clearances for new projects • Resultant cost escalations rendering projects unviable • Increased instances of collapses in contracts due to delays faced in obtaining clearances

Despite beating target set by the Ministry of Shipping in terms of traffic handled by a considerable margin in FY-2014, and also registering a handsome year-on-year growth rate in traffic, certain challenges were observed as far as infrastructural, operational and policy aspects were concerned at the Paradip port, as has been summarized below:

Issues Related to Berthing

Pre-berthing Detention

Long pre-berthing detention of vessels was noticed at the Paradip port, the minimum waiting period for a vessel to attain a berth being 2 days, with instances of the detention getting even longer, keeping vessels stranded for berths for considerable lengths of time.

Analysis of the daily berthing charts obtained from the port authorities, it was observed that for the month of December 2015, the average pre-berthing detention of vessels was 2 days, with 7-8 vessels always waiting for a berth per day. These long waiting periods for vessels calling on the port translate to additional costs to be borne by the shipping line, apart from the time lost. A number of reasons including low levels of mechanisation at the Paradip port, priority berthing policy and high vessel turnaround time can be cited as the major determinants of high pre-berthing detention. The berthing policy at Paradip port allows for priority berthing, in case of instructions received from the central government, for container vessels and for vessels under Berth Reservation Scheme . This priority berthing principle at times translates to long waiting periods for other vessels, thereby giving rise to pre-berthing detention. Mechanisation issues such as low evacuation capacity of existing grabs/cranes, shortage of rakes, manual handling during rake evacuation, etc. pose considerable challenges leading to higher turnaround time of ships. Further, shortcomings with respect to supervision capacities—having only 12 officers (including merely 7 inspectors) designated for the 14 berths at the port—were also observed.

Year	Average Detention (Days)
2010-11	5.04
2011-12	3.69
2012-13	1.65
2013-14	1.65
20114-15	1.50*

*provisional Source: Ministry of Shipping

Table 3.2. Pre-berthing Detention at Paradip Port

Berthing of Vessels at PPT (as on 7-9-2015)

On September 7th 2015, 16 vessels were berthed at Paradip port. Out of these, 9 vessels had a pre-berthing detention of 2 or more days. Vessels under the priority berthing scheme (such as MV Vishwa Prerna which guaranteed a volume of 22,000 tonnes) have no pre-berthing detention and are berthed within one hour of arrival. However, vessels such as MV Gem of Ennore with a lower guarantee of 6,200 tonnes had a pre-berthing detention of 2 days.

Inadequacy of Berths

The Paradip port has experienced a surge in traffic since 2013. Construction of new berths in congruence with such growth, however, has long been delayed, with the introduction of the last berth dating back to 2001. A new berth is particularly necessary because of the inadequacies in the existing berths to handle modern vessels with higher Length Overall (LOA) and draft. Central Quay-I (CQ-I) has a drafts of above 14 metres, therefore having the capacity to berth larger bulk-carriers up to a capacity of approximately 95,000 DWT. There is a demand for more berths with such draft levels, the lack of which is an area of concern for Paradip Port Trust (PPT). This issue is further augmented by insufficiency in the length of the berths. The current length of the berths, at 217 metres each, is not enough to accommodate two Panamax vessels together as the cumulative requirement is 460 metres (up to 230 metres for one vessel, with 34 metres space between each vessel), which is not available at Paradip port. As a result, as one bulk carrier (e.g. Panamax tanker) is berthed, the other berth has to remain unutilized. This causes the productivity levels to drop, coupled with longer overall delays.

[1] *Berthing Policy 2015-16, Paradip Port Trust*

Inadequate Mechanisation

Equipment (No.)	Current Capacity (MT)	Required Capacity* (MT)
Wharf Cranes (2)	20	100
Mobile Harbour Cranes (5)	60-100	400

**using Mundra Port Trust as benchmark corresponding to the annual bulk cargo traffic*

Table 3.3. Crane Capacities vis-à-vis Requirements

Around 60% of the cargo handled at the Paradip port is bulk cargo comprising of thermal coal, iron ore and fertilizers. Mobile harbour cranes (MHC) coupled with grabs are used to transfer such cargo from the vessels to the trucks. The evacuation capacity of the grabs currently in use is 10,000 tonnes per day by four cranes (thus, to evacuate a 40,000 tonne cargo vessel, it would take 4 days). This is considerably below the required capacity (as depicted in the table 3.3) at the Paradip port which translates into longer berth occupancy by one vessel.

Ennore Port Rail Capacity Augmentation

Bulk cargo, particularly coal, constitutes the major share of cargo handled at Ennore Port. Till 2015, the Port was handling six rakes a day with two railway sidings. In 2016, the port's rail cargo handling capacity has quadrupled to 24 million tonnes a year with the commissioning of an additional rail siding. The port, which could handle six rakes a day so far, will now be able to handle 24 rakes of bulk cargo by rail. This will result in improvement in thee shunting time and speed of handling will also improve.

Fallacies in the Berthing Policy

Introduced in 2014, the Paradip port follows a priority berthing policy based on Minimum Guarantee Tonnage (MGT)—giving priority in berthing to vessels that guarantee a minimum of 100,000 tonne of cargo for a storage area of 1,000 sq. metres in a financial year through a bank guarantee—which helps the port ensure minimum revenue targets are achieved as well as helps it stay competitive. Two berths at the Paradip port are reserved for this scheme. However, the priority berthing principle had led to longer pre-berthing detention for relatively mid-sized vessels, especially those owned by smaller parties which cannot guarantee the minimum cargo requirements for attaining priority berthing. As a consequence, instances of ships, which can avail the guarantee, calling on the Paradip port are on a decline, and the smaller players are consistently moving to other minor ports such as Dhamra.

Furthermore, according to the 2015-16 guidelines by the PPT's Traffic Manager, the berthing policy at the Paradip port allows for priority berthing in case of instructions received from the central government, for container vessels and for vessels under the Berth Reservation Scheme, at times, adding to considerable detention of vessels, which translate to escalated costs.

Delay in Rakes Evacuation

Bulk cargo, the principal commodity type handled at Paradip port, typically requires faster evacuation from the port, and rakes prove to be the most efficient among the available alternatives to achieve the same. However, only two rake lines are available (one each for import and export) at Paradip port, which leads to evacuation of volumes far lower than the desired levels, and thereby creating congestion at the port and causing longer detention of vessels. The port currently has two railway sidings with seven locomotives which evacuate approximately 50,000-60,000 tonnes of cargo per day. However, the evacuation requirement from the port is ideally around 1,00,000 tonnes in order to avoid congestion and detention of vessels. The problem is further augmented by low levels of mechanisation, as manual handling of cargo leads to low productivity. As a result, the cargo evacuation procedure is stalled at the port.

The process of evacuation through rakes also needs to undergo improvements. Currently, loading on rakes takes place manually through pay-loaders instead of

the more efficient silos. As far as unloading cargo from rakes is concerned, only two rakes can be evacuated at a time owing to a paucity of railway lines. The port, as a result, works on backlog due to delays in operations. Further, the availability of rakes per day is far below the actual requirement. Paradip port will have to go through capacity augmentation in rake evacuation, in line with recent developments such as the increase in rail capacity at the Ennore port, to achieve desired operational efficiencies.

Undiversified Cargo Profile

Paradip port handles only bulk cargo. Though the port ranks second in the country, in terms of handling this type of cargo, after Kandla port, its cargo profile still remains mostly undiversified. The principal reason behind this monopoly in handling only bulk cargo is the considerable difference between wharfage charges associated with handling bulk cargo as compared to general cargo. Further, around 15,000 tonnes of bulk cargo can be discharged per day as compared to only 1,000 tonnes in case of general cargo. It is argued by relevant stakeholders that to achieve the government stipulated per day output targets, it becomes imperative for PPT to focus on bulk cargo. The need for additional infrastructure for other cargo variants could also be gauged. For example, the port requires separate container berths for handling container cargo to avoid contamination. Power is also an issue at Paradip port, which makes it difficult to handle reefer containers. Other issues such as lack of adequate railway connectivity, lack of stacking area, etc. impede the process of cargo diversification at the port.

Frequent Strikes by Worker Associations/ Labour Unions

Adverse situations in the form of frequent strikes by various associations and labour unions, with the support of local politicians on most occasions, create serious hindrances towards the overall functioning of the port. Recurrent unrests among port workers, stevedores, transporters and other worker groups have become a fixture at Paradip port. For instance, in recent times, protests from labourers have had a deep impact on the mechanisation process, which is aimed at making the cargo unloading process faster as well as ensuring that higher volume of cargo is handled per labour. Further, these protests lead to transportation delays, bringing down the number of trucks evacuated from the port in a day. These issues lead to loss of productivity at the port, which in turn increases costs for importers and exporters. Such traders are increasingly diverting their ships and cargo to other nearby ports, a development which is increasingly affecting the overall competitiveness of Paradip port.

Higher Operational Costs

Operational costs, especially those related to cargo handling, are very high at Paradip port, a development which is essentially bolstered by its monopoly in bulk cargo handling as well as the frequent labour issues faced by the port. Cargo handling charges at Paradip port is more than INR200 per tonne, far higher than the prevalent rates of around INR 80-90 per tonne. Further, frequent delays related to berthing, cargo loading and unloading also add to the overall per tonne cost at Paradip port, which threatens to affect the port's competitiveness in the longer term.

Lack of Laboratory Facilities

There is no customs laboratory facility at the Paradip port and there are no competent laboratories in the state itself. For certain cargo handled at the port, such as limestone, the duty structure is different for the diverse variants reaching the port. Such cargo therefore needs to be tested and has to be sent to Kolkata for the purpose. The entire testing procedure requires a minimum of 6 months to complete, and may stretch to as long as a year. This leads to considerable cost escalations, and makes it difficult for the port to competitively handle such cargo and to avoid diversion of such cargo to other ports.

Land Issue

Paradip port faces various land related issues, mostly due to ambiguity over undefined borders as well as encroachment and unauthorized occupation. Smooth land settlement by closely working with the state government, in the context of catalyzing new projects, is a development that is yet to take shape i.e. become more organized and hassle free. Further, lack of coordination between PPT and the local municipal corporation as well as dearth of clear delegation of

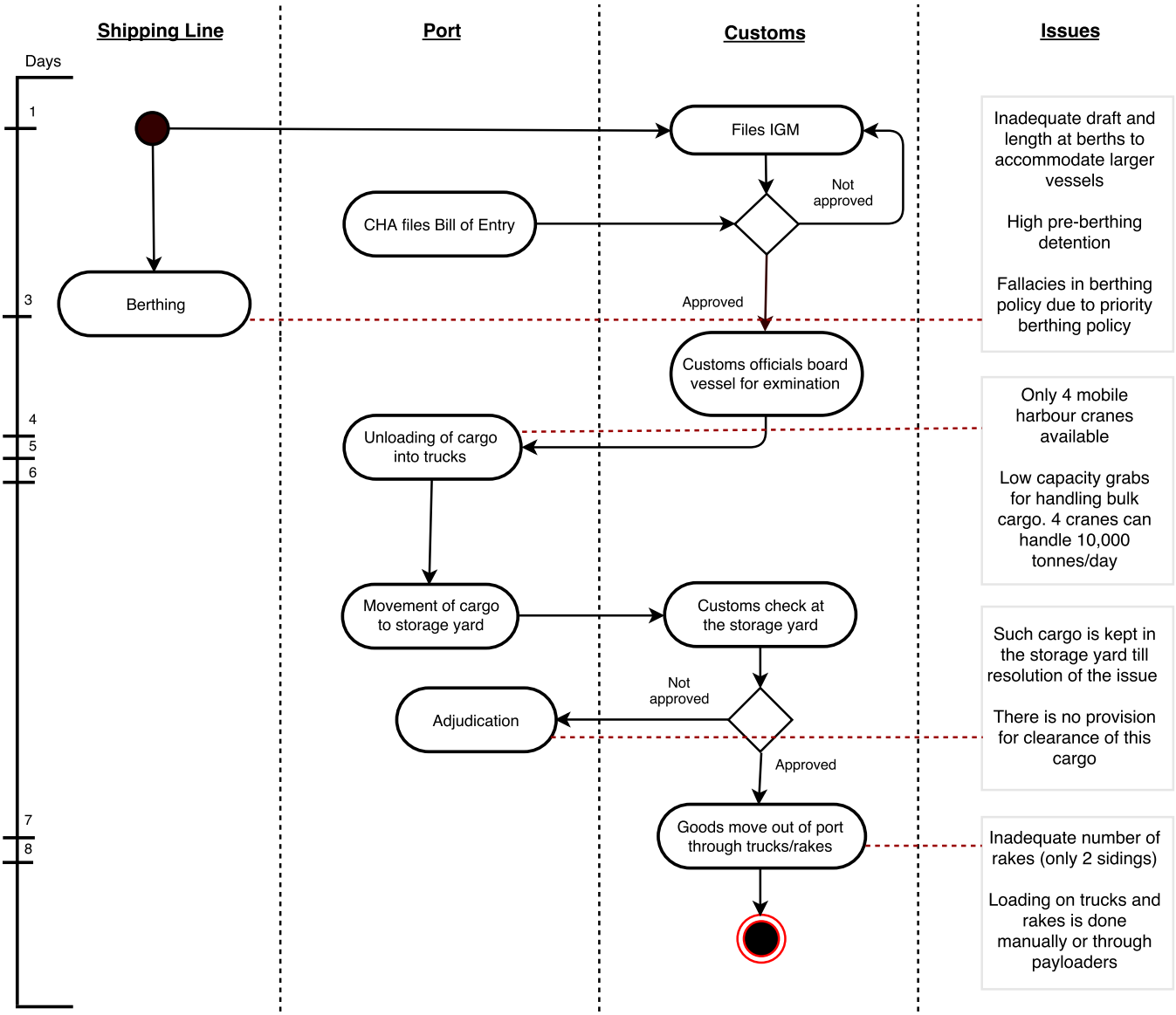
[2] *As of September 2015*

duties can be gauged, which leads to unnecessary delays in projects and escalated costs. It also worsens the problem of encroachment, and thereby utilizable land gets locked for indefinite time periods.

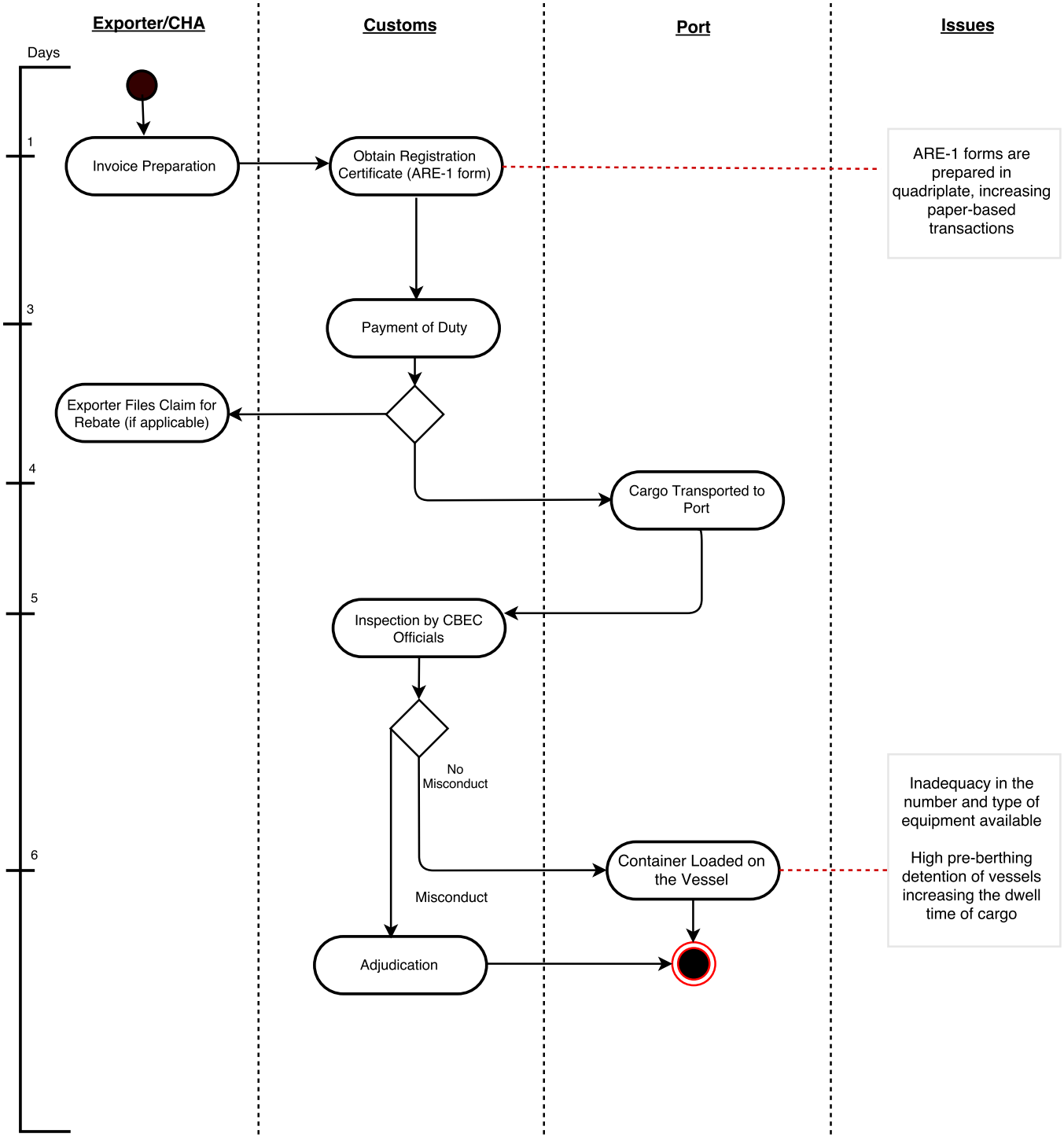
Cumbersome Regulatory Clearance Procedures

Delays and hassles faced in obtaining regulatory clearances for new projects is a major issue observed at PPT. For any project to be implemented at the port, a security clearance is required from the Ministry of Home Affairs, which entails a cumbersome procedure. Additionally, clearance is also required from the National Green Tribunal for initiation of new projects, wherein delays are frequently faced as well. As a result, the port is wary of taking up projects on its own and relies mostly on private enterprises for initiatives. However, long delays in regulatory clearance procedures lead to undue cost escalations and the Whole Price Index (WPI)-linked tariff increments, sanctioned by the government, do not prove to be enough to compensate for the heavily inflated project costs, thereby rendering the projects unviable. PPT has in the recent times experienced collapses in contracts due to delays in clearances, which has had an adverse effect on its cargo-handling capacity expansion plans.

Movement of Cargo at Paradip Port - Import



Movement of Cargo at Paradip Port - Export



3.2.2. Plan of Action

Recommendations and Indicative Plan of Action	
Transformation from Semi-Mechanisation to Complete Mechanisation	• Plugging the gaps in mechanisation across the evacuation process at the port, from unloading ships to evacuation through rakes • Introduction of modern cargo handling equipment to sufficiently enhance evacuation capacity • Introduction of the silo system for loading on rakes • Introduction of an additional railway line ensuring increase in number of rakes evacuated per day • Increasing impetus for mechanisation through the PPP route
Scaling Up Berthing Capacities and Streamlining of Allied Policies	• Introduction of additional berths • Introduction of dedicated container berths equipped with required equipment • Cargo handling using floating cranes and barges for bigger vessels • Making necessary amendments to the berthing policy to address the issue of priority berthing • Introduction of separate berths for priority berthing as an immediate measure to avoid hassles • Reframing the policy of customs authorities detaining vessels at the port till duty is cleared
Resolving the Land Issue	• Fast resolution of land related disputes • Increasing coordination between the port authorities and the municipal corporation • Development of proposed smart city around the port
Diversification of Cargo Profile and Development of Allied Infrastructure	• Diversification of cargo profile with special focus on overall growth of the local economy • Increased container handling • Introduction of additional infrastructure augmenting the cargo diversification process i.e. cold storages, state of the art labs, etc.
Increased Connectivity through Dedicated Freight Corridor and Development of Inland Waterways	• Development of the eastern dedicated freight corridor for faster evacuation of bulk cargo through rakes from the port • Development of an inland waterway system connecting Paradip with the hinterland • Strategic scaling up of dredging activities in specific inland waterway routes in a phase-wise manner
Port Development Initiatives	• Independent execution of developmental projects in areas such as mechanisation, dredging, development of new berths, renovation of the storage yard, addition of railway line and optimal utilisation of available land banks • Increasing in port development and modernisation projects through the PPP mode in the presence of an independent arbitrator

Transformation from Semi-Mechanisation to Complete Mechanisation

Despite having handled substantial traffic in the recent times, the Paradip port has frequently faced the problem of inadequate mechanisation and manual handling of critical processes, the effects of which have continually trickled down on key operational aspects such as evacuation from vessels to trucks, rake evacuation and overall vessel turnaround time. The resultant dip in efficiency has led to the following impediments:

» Substantial pre-berthing detention which has further accentuated to increased costs for shipping lines

» Congestion at port leading to overall delays

» Higher operational costs inflating overall per tonne cost thereby affecting the competitiveness of the port

The Paradip port suffers from the problem of semi-mechanisation, an issue which needs to be addressed to overcome the aforementioned operational glitches.

It currently has five privately-owned mobile harbour cranes. The grabs attached to these cranes for the purpose of vessel-to-truck evacuation are substantially low on evacuation capacity. Further, the process of loading on rakes is carried out manually with the help of pay loaders while more efficient alternatives, such as silos, remain absent at the port. The number of rakes evacuated from the Paradip port stands at a mere 10 per day, whereas ideally the number of rakes evacuated should be around 20 per day to maintain desired levels efficiency and operational mobility. It can thus be seen that the entire evacuation process, starting from unloading of the vessel to rake evacuation, is not adequately mechanised or mechanised in patches with critical operations handled manually.

The Paradip port needs a seamless and fully-mechanised system in place for cargo handling and evacuation. The port needs to upgrade the cranes along with the grabs in use to enhance the evacuation capacity and sufficiently reduce vessel turnaround time to tackle the problem of pre-berthing detention and improve overall operational efficiency. As was observed at Kandla port during the study, a private player named RAS Infraport Pvt Ltd. (RASIPL) used mobile harbour cranes, each having a capacity to handle 20,000 tonnes per day. Therefore, each crane was capable of handling 40,000 tonnes in 2 days, while the same would be handled in 4 days by four mobile harbour cranes installed at the Paradip port. It is evident therefore that modern cargo handling equipment are largely missing at the Paradip port, and introduction of the same is an urgent requirement. Further, the process of loading on rakes needs to be mechanised through the introduction of the silo system. Successful implementation of the same would require adequate planning and diligent interactions with various stakeholders, including labour unions. The silo system will lead to clearance of more wagons per day, from the current average of 12. PPT must add an additional railway line to its existing infrastructure and aim at increasing the number of rakes evacuated from 10 to 20 per day to achieve the desired evacuation targets.

Finally, the process of mechanisation through PPP route needs to be encouraged further. The recent approval given by the central government for the mechanisation of three berths, EQ 1, 2 and 3, on BOT mode under PPP promises to go a long way in increasing the cargo handling capacity of these berths, ensuring augmented operational efficiency. More such initiatives under the PPP mode should be implemented at the port to improve its productivity and competitiveness in the long run.

Scaling Up Berthing Capacities and Streamlining of Allied Policies

The ever increasing traffic at the Paradip port, coupled with its ambitious capacity expansion projections in accordance with growing demand, has to be bolstered with enhanced berth infrastructure and adequate policy framework i.e. more berths, increased draft in existing berths, separate berths for container handling, reduced ship dwell time and deliberations on associated policy issues.

No new berth has been added at the Paradip port since 2001, a scenario which needs to quickly change to make way for PPT's cargo handling capacity expansion plans for the next decade. With increased focus on containerisation, there is also a need for separate container berths equipped with adequate draft, mobile harbour cranes, hoppers and mechanized evacuation systems in place. This would not only ensure better cargo handling but also prevent contamination, which has been a deterrent for handling containers at Paradip in the past. Further, with only one existing berth (CQ–1) having a draft of above 14 metres, it becomes imperative for PPT to scale up dredging operations at the berths so that bigger vessels can call on the port.

As an interim measure and if possible a long-term practice, PPT can adopt a two phase cargo handling system as is prevalent at the Port of Antwerp, which is the premier break bulk port in Europe and one of the leading container handling ports in the world. At Antwerp port, floating cranes unload the tonnage (one crane can lift up to 800 tonnes at one time) into barges (meaning port handles more tonnage than its berth capacity), which are despatched to their destinations (37% of goods are transported using this more eco-friendly and cheap means of transport), following which the vessel is either docked to unload the remaining tonnage or it leaves the port for its next destination. Adoption of such a system would enable PPT to handle large vessels in the shorter term, and

provide necessary fillip to the productivity of the port, cargo delivery procedures as well as the management of transportation time and costs.

As far as policy issues are concerned, the berthing policy needs to predominantly be directed towards berthing of ships on a first-come-first-serve basis. The berthing policy makes way for priority berthing as well, a principle aimed at encouraging containerization, coastal shipping, minimum guarantee tonnage, etc. among others. The policy is often seen as a major roadblock, especially by smaller players, as long waiting periods translate to heavy demurrage to be paid by these players. Such cost escalations have serious ramifications on these players, and therefore these players are increasingly getting diverted to other ports. PPT needs to bring necessary amendments to the berthing policy at the earliest to avoid such diversion of traffic which threatens to sufficiently hamper its competitiveness in the longer run. As an immediate measure, separate berths can be assigned for priority berthing, which may also allow for normal sequencing when priority berthing requirements are not there. Such a structure, comprising of captive berths, priority berths and berths allowing for normal sequencing of vessels, is expected to remove the ambiguity over berthing and help players manage their costs in a better manner.

The second area of concern is the policy of customs authorities detaining vessels at the port till duty is cleared by the shipping agents or the CHAs. Such situations lead to undue extensions with respect to turnaround time for vessels, the associated additional costs having to be borne by the shipping line. The port authorities and the customs department must deliberate on this issue, and ensure that detention, if any, is of the cargo and not of the vessel. It is imperative to implement the same to minimize turnaround time, bring down pre-berthing detention of vessels, reduce additional costs to be borne by the shipping lines and thereby maintain competitiveness of the port.

Resolving the Land Issue

Paradip has over the years faced issues pertaining to allocation of port quarters for users, availability of office and residential space in the town, ambiguity over undefined borders, unauthorised occupation, lack of coordination between the port authorities and the Municipal Corporation among others, which has entailed consequences such as unnecessary delays in projects, heavy escalations in costs, non-development of private sector enterprises, etc. The resultant slowdown in industrial activity in the region has hampered its development as a whole and has fuelled associated impediments such as unemployment, strikes, etc.

As on September 1, 2015, the state government handed over the port land to the central government as a measure for facilitating the resolution of land related disputes. The central government's role in the development of the proposed smart city around the port through planned utilisation of land, development of port based industries, creation of adequate infrastructure for development of private players and facilitation in terms of ease of doing business will go a long way defining the overall development of the local economy in the longer run.

Diversification of Cargo Profile and Development of Allied Infrastructure

PPT ranks second in the country in terms of handling bulk cargo, but in reality it does not necessarily benefit Paradip, and majorly serves the neighbouring hinterland comprising of Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand and other parts of Orissa.

A major agenda for PPT should be the overall growth of the local economy, for which it is imperative for the port to diversify its cargo profile. Increased container handling is seen as the first major step towards attaining that objective by stakeholders. The container terminal at JNPT, which has a draft of 14 metres, can be taken as a reference by PPT, and separate container berths may be developed where such draft is available. Building of separate container terminals and allied infrastructure is expected to generate more business in the immediate locality, which would not only ensure increased revenues for the port but also generate more business in the hinterland, thereby aiding overall growth.

PPT should also focus on additional infrastructure to provide further fillip to the cargo diversification process. For example, PPT needs to introduce cold storage facilities for dealing in reefer containers.

Further, there is a need for labs for testing, as cargo required to be tested is sent to Kolkata for the purpose, which has obvious implications in terms of time and cost. CBEC and CRCL should work in tandem to facilitate the introduction of required infrastructure as per the stakeholders. Focus should also be on encouraging the privatisation of labs to introduce modern infrastructure and latest facilities. Introduction of CRCL accredited private labs at Paradip would be a major step towards that direction.

Increased Connectivity through Dedicated Freight Corridor and Development of Inland Waterways

Development and streamlining of certain additional infrastructure would go a long way in augmenting certain key operations at the Paradip port.

Firstly, development of the eastern dedicated freight corridor would ensure faster evacuation of bulk cargo through rakes from the port and would ease congestion at the port, which is a major issue it faces currently. It would provide enhanced connectivity to the port and help it expand the hinterland it serves. Such a development would ease up transport of cargo to and from the western part of India as well.

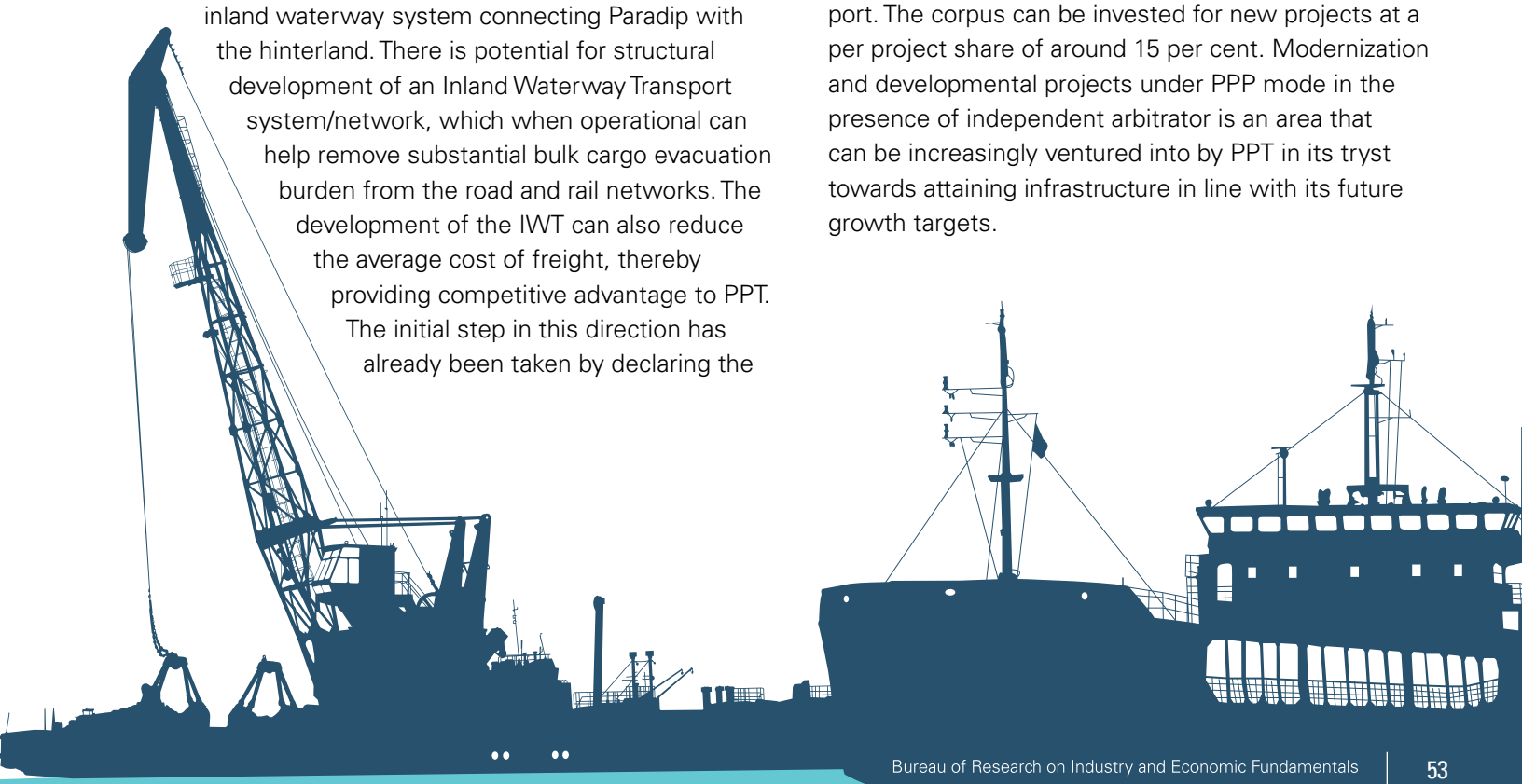
Further, there is a dire need for developing an inland waterway system connecting Paradip with the hinterland. There is potential for structural development of an Inland Waterway Transport system/network, which when operational can help remove substantial bulk cargo evacuation burden from the road and rail networks. The development of the IWT can also reduce the average cost of freight, thereby providing competitive advantage to PPT. The initial step in this direction has already been taken by declaring the East Coast Canal on Brahmani-Kharasua-Mahanadi as National Waterway-5 back in November 2008. In the first phase, development of inland waterways on the stretch connecting Paradip port with Kalinganagar (site of major steel plants) can be taken up. Adequate phase-wise dredging would allow increased use of barges to carry coal, iron ore, steel, etc. between the industry and port.

Port Development Initiatives

PPT, being a cash rich port holding sufficient reserves, has the liberty to independently take up developmental projects in the areas of:

- Mechanisation of existing berths
- Dredging of existing berths
- Development of new berths (for container cargo, iron ore, coal, etc.)
- Renovation of the storage yard
- Construction of additional railway line
- Utilisation of available land banks

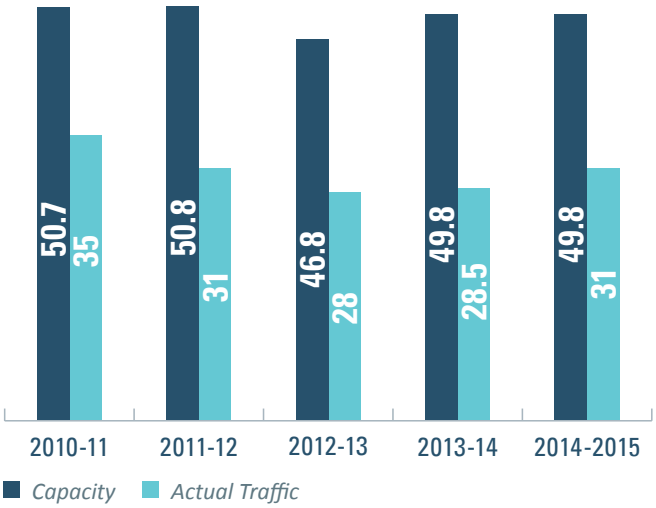
Allocation of 50 per cent of the reserves towards such developmental initiatives would go a long way in increasing the profitability and competitiveness of the port. The corpus can be invested for new projects at a per project share of around 15 per cent. Modernization and developmental projects under PPP mode in the presence of independent arbitrator is an area that can be increasingly ventured into by PPT in its tryst towards attaining infrastructure in line with its future growth targets.



HALDIA DOCK COMPLEX (HDC)

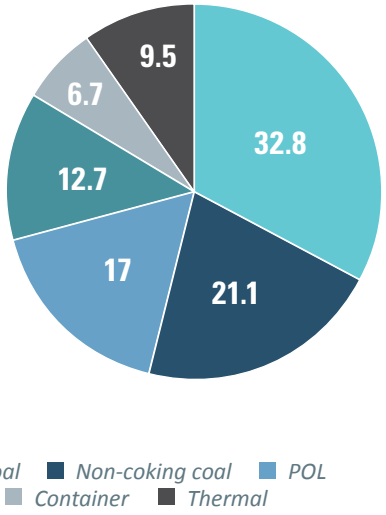
Haldia Dock Complex (HDC) is one of the two ports in Kolkata under the Kolkata Port Trust. It is located 104 kilometres downstream of Kolkata. HDC caters to the vast hinterland of northern and eastern India. The first phase of inland waterways development, between Haldia and Varanasi, is expected to bolster prospects of trade through the port to a considerable extent in the times to come. The land in possession of HDC measures 372 hectares.

Year-on-Year Traffic



Traffic Handled at PPT (in MT)

Cargo Profile



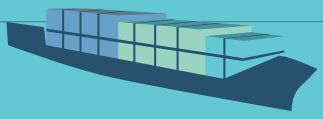
Cargo Handled by HDC in 2014-15 (Percentage)

Infrastructure

Berths	Draft (m)	Length (m)
12 Berths	6-8.5	183-432
3 Riverine Oil Jetties	5-7	236-277

Cargo Handling Equipment

Equipment	Number	Capacity per Crane (Tonnes)
Mobile Harbour Cranes	3	3 , 18, 15



Container Cargo Traffic (TEUs)

2013-2014	103,000
2014-2015	102,000

Storage

Particulars	Storage Capacity
Transit Shed	25,040 sq. m.
Warehouse Area	1,05,000 sq. m.
Open Yard Stacking Area	7, 87, 840 sq. m.

Connectivity

Road :
NH-41

Railway :
3 Lines

ICD :
Amingaon, Balasore, Durgapur, Haldia, Majerhat (Kolkata), Shalimar (Kolkata)

3.3. Haldia Dock Complex (HDC)

3.3.1. Challenges

Major Issues Faced	
Inadequate Draft and Improper Dredging	• Being a riverine port, excessive siltation is a natural impediment, which is further worsened by improper dredging activities • Consistent reduction in the draft of Hooghly estuary due to irregular dredging • Difficulties faced in manoeuvring vessels to HDC due to uneven sea-bed
Pre-berthing Detention at HDC and Congestion at the Sandheads	• Limitation in lock gate performance restricting the number of vessels that can approach HDC in a day, thereby leading to congestion at Sandheads • Delays in cargo unloading from one vessel adding to pre-berthing detention for other vessels waiting for a berth
Issues Related to Mechanisation	• Inadequate mechanisation in 12 of the existing 14 berths • Inadequate bulk and container cargo handling equipment • Lack of scanners leading to manual checking
Delays in Shifting Containers to CFS/ Warehouses	• Frequent instances of containers staying on the wharf for sufficiently higher timeframes vis-à-vis permissible time limits • Delays due to limited availability of vehicles, congestion at the port gate and lack of adequate container handling equipment • CHAs not allowed to arrange own transport for faster clearance of cargo, and the prerogative lies with the shipping lines
Dearth of Testing Facilities	• Lack of testing facilities/laboratories at HDC • Samples are sent for testing to Kolkata (FSSAI), Delhi and Bangalore, involving time consuming procedures • For sensitive cargo, clearance is required from state/district level authorities post testing, adding to procedural delays • Mandatory submission of hard copy of testing report by CHA (while a soft copy is sent to the port) leading to delays in cargo clearance and congestion at the port
Shortage of Labour	• Insignificant recruitment of labours and stevedores vis-à-vis actual requirement • Increasing number of pensioners, leading to cost pressure
Regulatory Issues	• Delays in filing of Bill of Entry • Lack of provisions for paperless clearance • Monopoly of shipping agents leading to delays in obtaining the Bill of Lading from them as well as payment of additional fees levied by them under various heads

Being a riverine port, HDC has continually faced the problem of excessive siltation leading to immense difficulties in draft maintenance. Irregular dredging activities over the years have further added to the woes of the port in terms of attracting sufficient larger vessels, which has affected its growth potential. Increased congestion at the Sandheads can also be observed, with inadequacies in performance of the lock gate and clearance-related delays being the major deterrents towards lowering such congestion and subsequent pre-berthing detention of vessels. With regard to port infrastructure, inadequate mechanisation at majority of the terminals, in terms of lack of cargo handling equipment as well as dearth of scanners, for faster cargo clearance were observed. Operational delays owing to factors such as—glitches

faced in shifting containers to CFS/warehouses, lack of testing facilities in Haldia and inadequate labour—among others were also evident at the HDC. Finally, regulatory issues in the form of delays in filing of Bill of Entry, inadequacies related to paperless clearance, delays in generation of Bill of Lading by shipping agents, etc. have been frequently reported. The following paragraphs take up the issues in further detail.

Inadequate Draft and Improper Dredging

HDC, being a riverine dock, faces the problem of excessive siltation and therefore requires frequent dredging. The effects of siltation are evident from the natural extension of the tail of Nayachara Island, and formation of a new island i.e. Balari Island on the channel that leads to the HDC. However, irregular dredging activities have resulted in consistent reductions in the draft of the Hooghly estuary over the years. Table 3.4 depicts the average draft figures recorded in the months of July and December during 2004-2008, and evidences of lowering draft over the years as well as increasing difference between average drafts recorded during summers and winters can be gathered. Drafts as low as 7.35 metres and 6.35 metres, as recorded in the months of July and December display the adverse effects of increased siltation, which bars larger ships from calling on HDC.

Year	Average Draft in the Month of July (metres)	Average Draft in the Month of December (metres)	Difference
2004	8.58	7.69	0.90
2005	8.47	7.61	0.86
2006	8.29	7.44	0.85
2007	8.28	7.08	1.20
2008	7.35	6.35	1.00

Source: Primary Field Information

Table 3.4. Draft Reduction in Hooghly River (2004-2008)

Improper dredging, over the years, has led to heavy siltation at the sea bed, rendering the path for navigation of vessels extremely narrow. Therefore, in-bound and out-bound vessels face the problem of narrow margins of space between them, which leads to enormous interaction between vessels, and lack of sufficient margin for manoeuvring. Thus, arises the operational impediment of moving only one in-bound or out-bound ship at a time, which translates into increased idle time for vessels at the Sandheads. During the course of port visits, instances of as many as 51 vessels stranded at the Sandheads, some for as long as 15 days, were observed.

Pre-berthing Detention at HDC and Congestion at the Sandheads

Clearance Related Delays in Cargo Unloading

Issues arising at various stages of the customs clearance procedure give way for delays in cargo unloading from vessels at the HDC.

Prior to a vessel's arrival at the berth, the documentation process is initiated by the shipping agent, the vessel's representative at the port. The agent first files an Import General Manifest (IGM), as per Section 30 of the Customs Act, with the customs department. This is filed through the Indian Customs EDI Gateway (ICEGATE) application, the customs portal for filing the IGM/Bill of Entry. The customs department henceforth verifies the information given in the IGM.

Complications occur in case of errors in the IGM, mainly related to cargo description, container number and exporter/importer details. Rectification of these errors takes as long as one day, leading to delays in the customs clearance process. The ensuing delay in unloading cargo, post the berthing of a ship, translates to a higher turnaround time and therefore increased congestion at the Sandheads.

Further, as reported by shipping agents, the ICEGATE software goes through frequent breakdowns which at times lasts up to three hours. The issue of slow connectivity while filing the IGMs through ICEGATE has also been a frequently faced problem. Such impediments lead to manual filing of the IGM by agents, which is a time-consuming process.

Limitations in Lock Gate Performance

Being a riverine port, Haldia Dock Complex has to depend on tidal cycles for easing the entry of vessels. The port uses lock gates at the entrance channel to maintain the desired water levels at the berths. These lock gates at the dock entrance can be operated at a specific frequency only i.e. "5-in-5-out". Operating the lock gates for more number of times increases the chances of them becoming dysfunctional, thereby leading to situations wherein the process of entry/ exit of vessels get stalled. Such situations result in increased number of vessels getting anchored at the Sandheads, taking pre-berthing detention periods to as high as 15 days.

Issues Related to Mechanisation

Inadequate Mechanisation at Berths and Paucity of Cargo Handling Equipment

HDC comprises of 14 berths i.e. ten multipurpose berths, two berths for container handling, and two mechanised berths for handling iron ore and thermal coal. Additionally, there are three oil jetties (Haldia Oil Jetties - HOJ), and two riverine barge jetties. Majority of the cargo handled at the HDC comprises of bulk cargo such as coking coal, non-coking coal and iron ore. Despite such cargo being handled in large quantities, only two berths, 4 and 4B, are adequately mechanised as they operate under the PPP model, and only three berths (3,4 and 5) are equipped with bulk cargo handling machines, which again are limited in number, including only two stacker-cum-reclaimers, two bulk material handling systems with mechanised grabs and two wagon tipplers.

There is an urgent requirement for mechanising the remaining 12 berths in order to improve the operational efficiency of these berths and therefore, bring down the turnaround time of vessels.

Lack of Scanners and Monitoring Systems

There are no scanners at HDC for examination of containers. As a result, manual checking is conducted by the customs officials, leading to delays in clearance of cargo. As per port users, HDC urgently needs electronic container scanners to speed up the process of customs clearance.

Further, LCL containers are stacked at port, instead of being taken to the CFS, as is the process followed in case of Full Container Load (FCL) containers. As instances of pilferage are prevalent at the dock, there is a need for establishment of a monitoring system for Less-than-Container-Load (LCL).

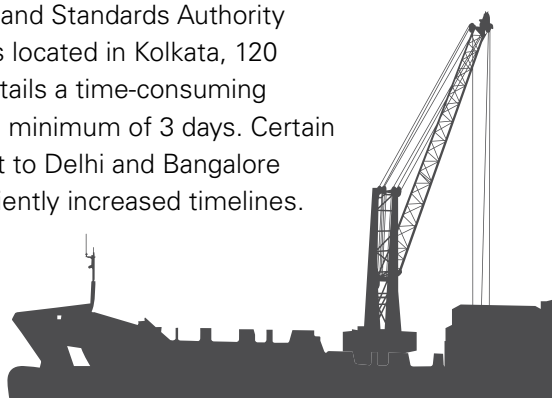
Delays in Shifting Containers to CFS/ Warehouses

Though containers are allowed to stay on the wharf for a period of three days, instances of containers staying for as long as 20 days have been noted. This extension in stay involves additional charges to the tune of USD 61 per FEU per day, to be borne by the importer. As is evident, these delays in shifting containers to the CFS/warehouses imposes sufficient cost pressure on the importers and as a consequence, hampers their competitiveness.

Dissecting the issue, it was observed that both infrastructural and regulatory issues are at the heart of increased delays in container movement at the port. The infrastructural issues include limited availability of transport, congestion at the port gate (single-line entry with inadequate width for passage of two trucks at a time) and lack of adequate container handling equipment. As for regulatory delays, the shifting of cargo from the port to the CFS by the shipping agent, as a part of the contract enshrined in the Bill of Lading, is an impediment towards faster clearance of cargo. Allowance of transport owned/hired by the CHA post berthing of the ship is considered a more proficient alternative towards speeding up the clearing process.

Dearth of Testing Facilities

Owing to a lack of testing facilities/laboratories in Haldia, the cargo for testing needs to be sent from HDC to the Food Safety and Standards Authority of India (FSSAI), which is located in Kolkata, 120 kilometres away. This entails a time-consuming procedure which takes a minimum of 3 days. Certain samples need to be sent to Delhi and Bangalore as well, leading to sufficiently increased timelines.



Further, in case of sensitive cargo, clearance is required from state and district level authorities for the port to handle such cargo and allow for turnaround of the vessel, which adds to delays.

Secondly, procedural ambiguities further aggravate the problem, leading to unnecessary delays and increased turnaround time of vessels. For instance, while a soft copy of the testing report is sent to the port, the CHA is further required to submit a hard copy, which again is a time consuming process as the transit time of the hard copy from testing centres in Kolkata, Delhi, Bangalore, etc. are substantial. As a consequence, the cargo occupies space at the port for a longer time, leading to space restrictions at the dock, overall operational delays and increased congestion.

Shortage of Labour

HDC continually faces the problem of irregular and insignificant recruitment of labour and stevedores, and therefore the workforce at the dock remains inadequate vis-à-vis cargo handled. On the other hand, the number of pensioners is consistently increasing every year, leading to additional financial burdens for the port authority. This shortage of workforce, in addition to the inadequacies in mechanisation, sufficiently hampers operational aspects at the port.

Regulatory Issues

Delays in Filing of Bill of Entry

Prior to the arrival of a vessel at the dock, a Bill of Entry is filed at the customs by the CHA, post filing of IGM by the shipping agent. However, the CHAs delay this process because any discrepancy in the IGM renders the Bill of Entry cancelled, and there is no facility for automatic correction of the Bill of Entry after necessary corrections are made in the IGM.

Further, both legal and software issues stand in the way of timely filing of the Bill of Entry, especially with respect to part-consignments. Due to delays in filing the Bill of Entry, cargo clearance gets hindered.

Lastly, according to the current Customs Act (Section 46), Bill of Entry (Forms) Regulations 1976, and Bill of Entry (Electronic Declaration) Regulations 1995, the Bill of Entry is required to be filed separately and there is no provision for automatic generation on the basis of IGM. This increases the involvement of paperwork as well as entails considerable time consumption, thereby delaying the clearance procedures.

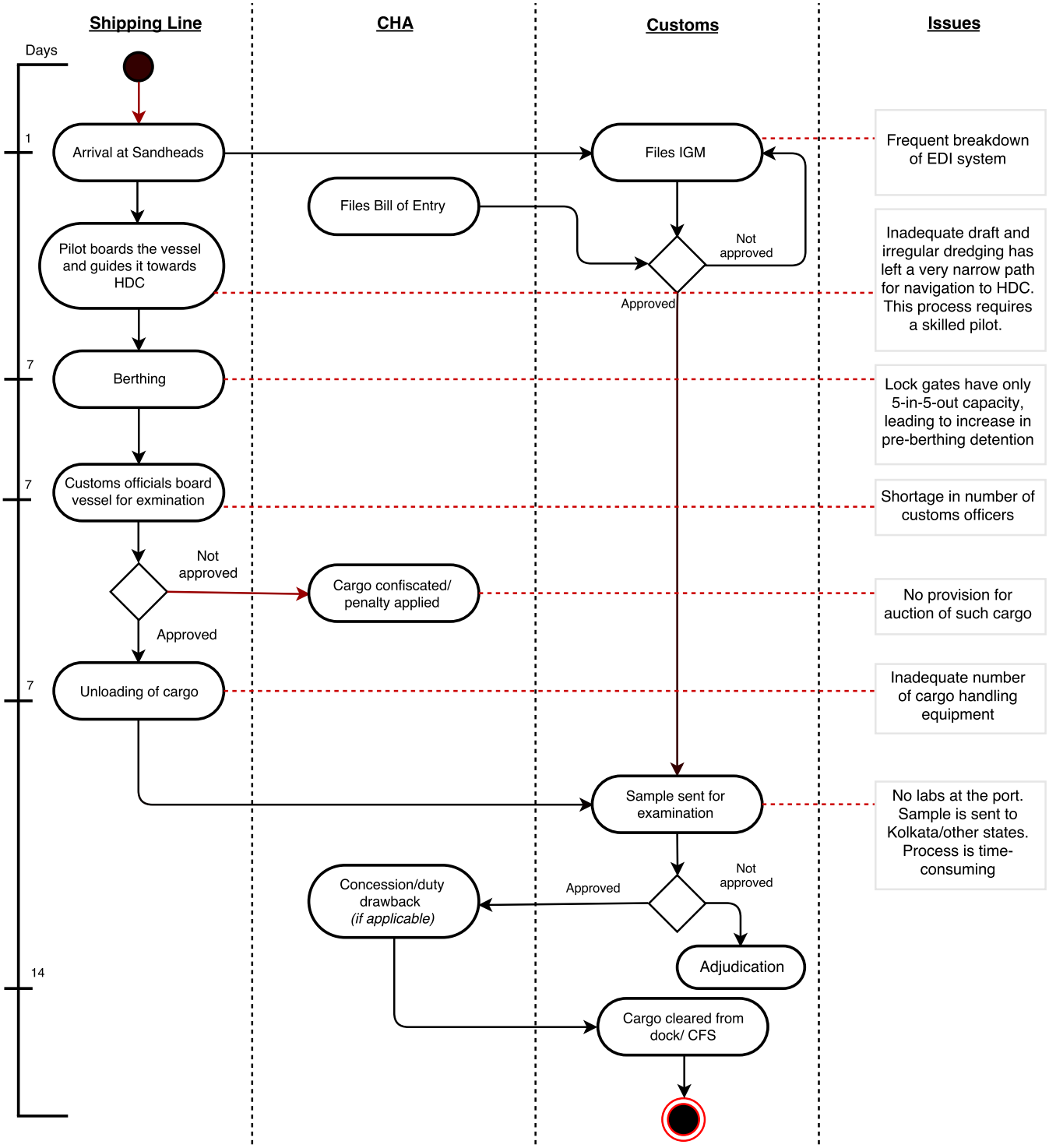
Lack of Provisions for Paperless Clearance

The current clearance procedure requires physical filing of a number of declarations by the importers, which leads to considerable delays. Therefore, in the interest of achieving paperless clearance of import cargo, these declarations need to be streamlined with online rendition, and a legal presumption can be created to make every importer responsible for the information—value of goods and other data—furnished in the IGM and the Bill of Entry.

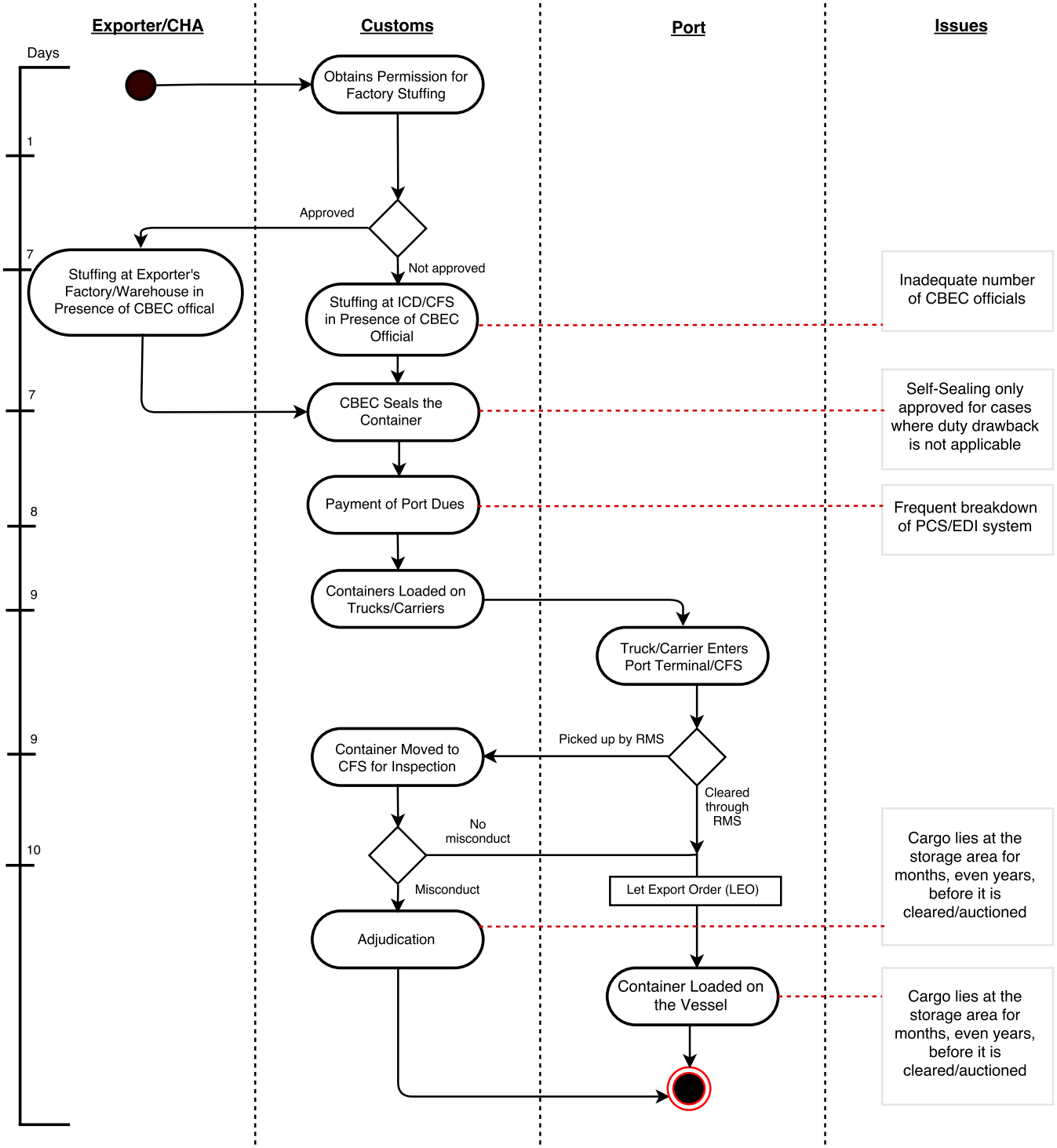
Monopoly of Shipping Agents

As indicated by the CHAs, inordinate delays are experienced in obtaining the Bill of Lading from the shipping agents, owing to their monopoly over the cargo brought by them. Further, a multitude of fees and charges are levied by the shipping agents for the issue of delivery order, such as a delivery order fee of approximately INR 2,000 - 3,000 per Bill of Lading in addition to terminal handling charges, and container cleaning and washing charges.

Movement of Cargo at HDC - Import



Movement of Cargo at HDC - Export



3.3.2. Plan of Action

Recommendations and Indicative Plan of Action	
Remedial Measures Addressing the Issue of Draft	• Re-routing navigation through the Eden Channel • Introduction of supporting projects for speeding up cargo transfer from the Sandheads to HDC
Streamlining Cargo Clearance Procedures	• Provisions for incentives on early filing of Bill of Entry • Realigning RMS-based clearance procedures • Introduction of e-facility for test reports • Flexibility towards equitable movement of cargo to CFS
Measures to Improve Coordination	• Enabling improved communication between shipping lines and feeder vessels • Introduction of single window clearance facilities • Establishment of a nodal authority for redressal of disputes
Potential Developmental Initiatives	• Construction of more berths on the outer harbour • Development of pipelines for transport of POL • Introduction of a container scanner • Introduction of monitoring systems at CFS and storage yards • Introduction of more banks at the port and the installation of an e-facility within the customs service office • Development of testing facilities within the port

Remedial Measures Addressing the Issue of Draft

Realising the Potential of Eden Channel

The Eden Channel, which has maintained a deeper draft than the predominantly used Jellingham and Auckland channels, promises improved navigability to the HDC. Therefore, there is a need for escalating the process of navigation through this channel.

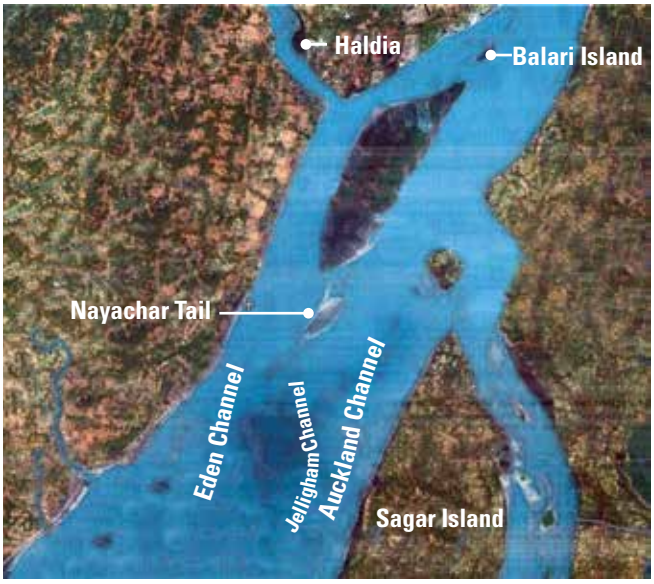
Year	Nav. Draft at Jellingham Channel (in Metres)	Nav. Draft at Eden Channel (in Metres)
1977	6.0	6.2
1997	4.6	4.8
2008	3.9	4.3

Table 3.5. Navigational Depth

The Eden Channel is expected to require lesser dredging as compared to the Auckland Route, thereby enabling sufficient reductions in dredging costs incurred for sustaining navigability to the HDC. The dredging cost of the Auckland Route is around INR 400 crore. With the use of the Eden channel and employment of new dredging techniques, the annual dredging outlay may be brought down considerably to INR 150 crore - 200 crore, as indicated in a study by the Boston Consulting Group.

Further, the Eden Channel promises to provide an additional draft of one metre as compared to the Auckland Channel, which is closer to Sagar Island. As per shipping experts, every metre of additional draft enables ships to carry around 4,000 tonnes of additional cargo, which in turn translates to decreased transportation costs for shipping lines.

Finally, the distance of the HDC from ports such as Paradip, Dhamra and Vishakhapatnam is lesser through the Eden Channel, as it is on the western side of the river. Therefore, use of the Eden Channel promises to bring down the distance covered by ships by around 17-20 miles as compared to the Auckland route. The aforementioned possibilities, when factored in, makes the Eden Channel an important alternative for the times to come.



Introduction of Peripheral Projects

Being a riverine port, the HDC will constantly be prone to siltation due to natural forces, thereby requiring regular dredging, and hence leading to substantial investments by the port. Therefore, there is a need for the HDC to encourage potential projects capable of speeding up the process of cargo transfer from the Sandheads to the port. For example, increased use of ballast vessels for speedy transfer of containers can be considered. For movement of bulk cargo, the facility of a trans-loader is being tested, and also the provision for an anchored floating storage is under consideration. Such projects, through efficient implementation, can ease the congestion at the Sandheads and increase the overall productivity of the port.

Streamlining Cargo Clearance Procedures

Incentives for Early Filing of the Bill of Entry

Delays in filing Bills of Entry by CHAs further defer the cargo clearance processes. The lack of coherence between the shipping agents and CHAs, in filing IGMs and Bills of Entry respectively, also adds to the delays. There is a need for the customs department to issue incentives for early filing of Bills of Entry so as to discourage the practice of delays.

Realigning RMS-based Clearance Procedures

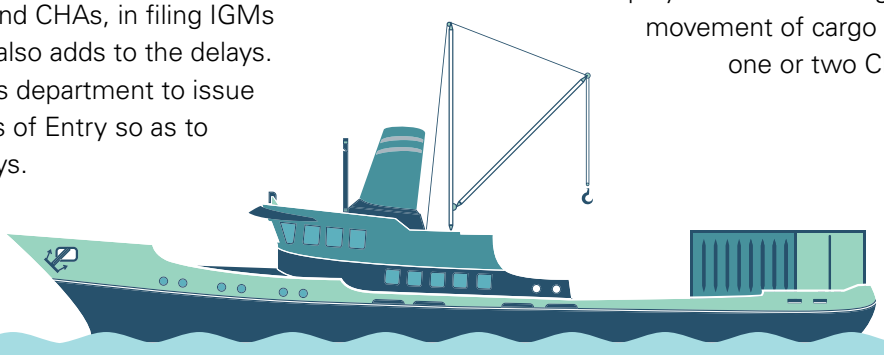
Risk Management System (RMS) based clearance procedure is not properly in place at the HDC. Despite a self-assessment certificate being allowed by the Central Board of Excise and Customs (CBEC), the practice is not followed by the customs department at the HDC. There is a need for RMS be extended to export clearances also and should include examination of cargo.

E-facility for Test Reports

The CBEC currently necessitates the submission of both soft and hard copies of reports in case of cargo which requires testing. This increases the dwell time, and leads to idling of vessels and cargo till the reports come from testing centres such as FSSAI, Kolkata. Rendering the process online would sufficiently reduce the dwell time and speed up clearance of cargo from the dock.

Facilitation for Equitable Movement of Cargo to CFS

Certain key measures can go a long way in streamlining the process of cargo movement from the port to the CFS. Importers need to have the option to select the transporter to be employed as well as the CFS to be used for movement of their cargo from the port. To aid this, a regulation may be enacted which requires the importer, at the point of loading of cargo at the load port, to specify the preferred CFS at the port of import where the goods need to be delivered, and the same should then be reflected in the IGM filed at the entry port. In the interregnum, the provisions of Cargo Handling Regulation 2009, which empowers the Commissioner of Customs to regulate the flow of goods to various CFSs, should be applied effectively to prevent a monopoly situation with regard to movement of cargo to only one or two CFSs.



Measures to Improve Coordination

Improvements in Communication between Shipping Lines and Feeder Vessels

Currently, the CHAs coordinate between the shipping lines and feeder vessels in addition to making the necessary payments to feeder vessels. This practice makes the overall processes complicated and cumbersome. As a remedial measure, a need for the shipping lines to directly contact and coordinate with the feeder vessels, including the initiation of payments can be gauged.

Introduction of Single Window Clearance Facilities

Lack of coordination between the port authorities and the customs department, as well as dual paperwork time, can be attributed to the lack of a 'single window facility' at the dock. Frequent breakdowns and connectivity issues pertaining to the ICEGATE system further aggravates the issue. The proposed single window clearance facility will go a long way in providing real time information to the port authorities, customs department, CHAs and shipping agents in a single portal, thereby making the cargo clearance processes streamlined, efficient and sufficiently less time consuming.

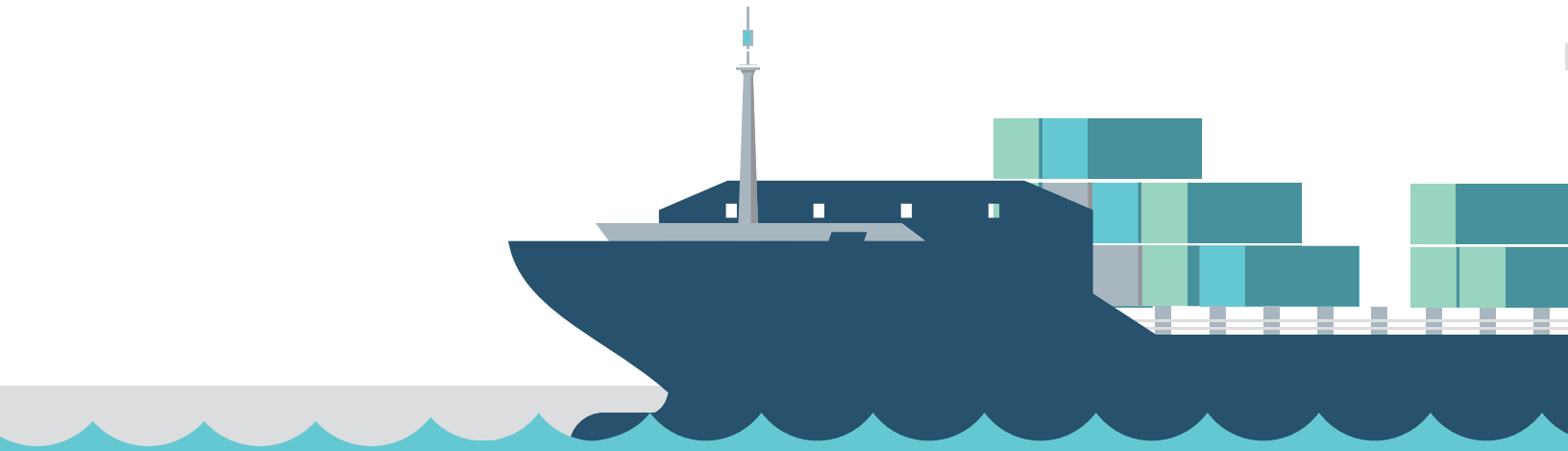
Establishment of a Nodal Authority

As per the stakeholders, lack of coordination and frequent disputes between the customs division and the port authorities can be frequently observed. Further, disputes between CHAs and shipping agents regarding delegation of responsibilities and handing over of documents are also quite recurrent, which lead to confusion and delays in operations. Introduction of a nodal authority would help in speedy redressal of these disputes, and facilitate the establishment of SOPs for the port, with special focus on inter-departmental co-ordination.

Potential Developmental Initiatives

Berths on the Outer Harbour

Development of three berths have already been planned on the outer harbour of the dock. However, sustained developments on the outer harbour in terms of more berths, is imperative for easing the traffic at the Sandheads. The dock complex has reached its threshold in terms of number of berths and jetties, and therefore, expansion of the dock complex would entail very high cost involvements. Hence, development of additional berths on the outer harbour on Build-Operate-Transfer (BOT) basis is expected to be a more economical alternative.



Pipelines for Transport of POL

POL forms a significant share of the total cargo handled at the port, and its transportation involves complex and specialised procedures. Pipelines are seen as a faster and safer mode of transport for POL cargo as compared to trucks. Therefore, development of pipelines should be encouraged at the HDC, and the process of floating tenders for the development of such infrastructure on PPP basis needs to be escalated.

Container Scanner

Container cargo at the HDC still goes through physical examination, which is an extremely time consuming and tedious process. Introduction of a container scanner will go a long way in easing the process of cargo clearance from the wharf and making it considerably less time consuming.

Monitoring Systems at CFS and Storage Yards

A major share of cargo stays in the yard or at the warehouses for more than 7 days due to delays in clearance procedures. However, these facilities lack in monitoring facilities for ensuring safety of such cargo. CCTVs at the CFS and an effective monitoring system, especially for LCL cargo, are foremost requirements towards this end.

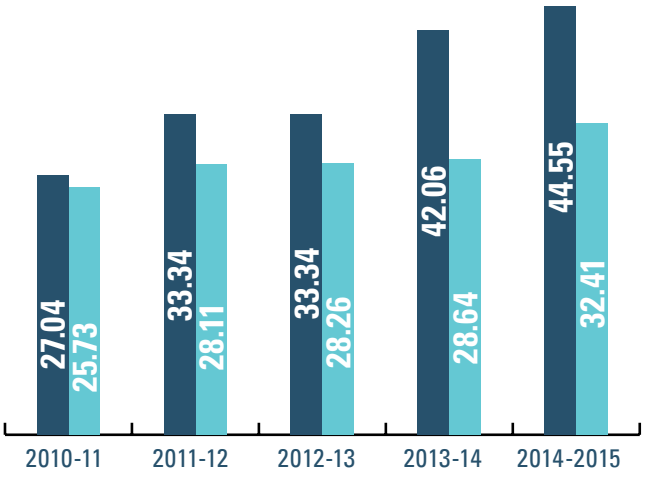
Testing Facilities

Haldia Dock Complex is spread over a huge area of more than 6,367 acres. There is ample scope for the development of testing facilities within the port, and the same should be encouraged as it is an urgent requirement to reduce the time taken for sending samples all the way to Kolkata or other far away destinations such as Delhi and Bangalore, and getting hard copies of reports from these places. Testing facilities within the port area would go a long way in easing the congestion at the HDC.

V.O.CHIDAMBARNAR PORT TRUST
(VOCPT)

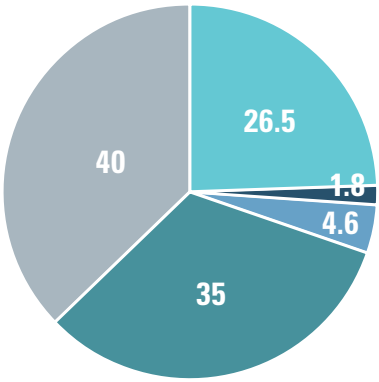
V. O. Chidambaranar ((VOC) port, earlier known as Tuticorin Port, is located on the south eastern coast of India in the state of Tamil Nadu. The port's hinterland consists of southern parts of Tamil Nadu, Kerala and also some regions of Karnataka. It handles a cargo profile comprising of both import (thermal coal, timber logs, petroleum products, LPG as well as various other bulk, break-bulk and containerised cargo) and export (granite, salt, raw sugar, cement in bags, containerised cargo and construction materials) cargo. The port has a land bank of 1,126 hectares.

Year-on-Year Traffic



Traffic Handled at VOC Port (in MT)

Cargo Profile



Cargo Handled by VOC Port in 2014-15 (Percentage)

Infrastructure

Berths	Draft (m)	Length (m)
14 Berths	8.6-12.8	168-345
Oil Jetty	12.80	228

Cargo Handling Equipment

Equipment	Number	Capacity per Crane (Tonnes)
Wharf Cranes	3	6-20
Quay Crane	3	35-45
RTGC	4	Max 5-level stacking

Container Cargo Traffic (TEUs)

2013-2014	9,000
2014-2015	4,000

Storage

Particulars	Storage Capacity
Transit Shed	10,800 sq. m.
Warehouse Area	15,086 sq. m.
Open Yard Stacking Area	72,000 sq. m.

Connectivity

Road :
NH-45B, NH-7, NH-7A

Railway :
1, 62 MT capacity

ICD :
Kerala, Tamil Nadu, Karnataka

3.4. V. O. Chidambaranar Port Trust (VOCPT)

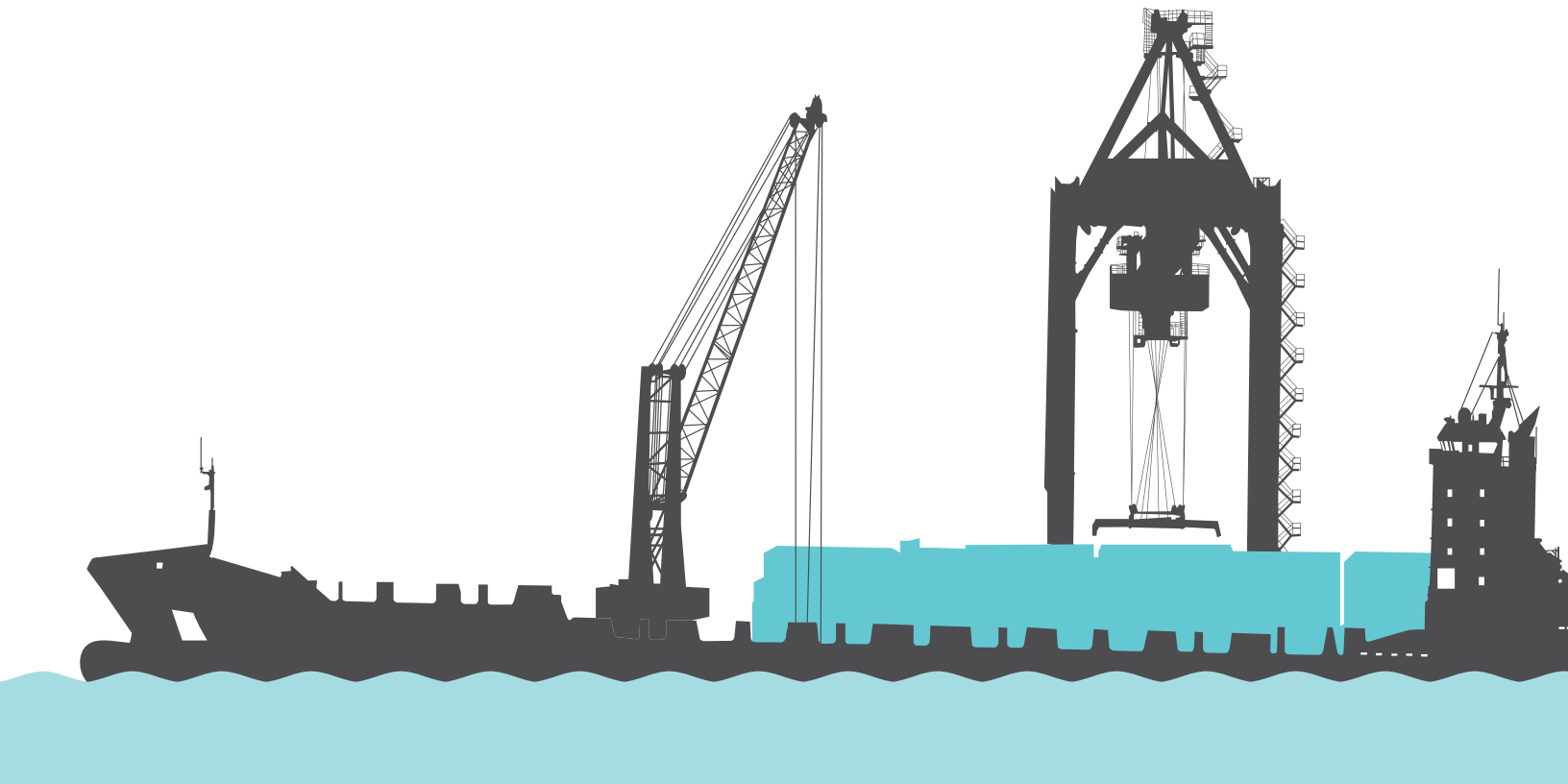
3.4.1. Challenges

Major Issues Faced	
Royalty/Revenue Share Issue between PSA-Sical Terminals Ltd. and VOC Port Trust	• The tariff issue between PSA-Sical Terminals Ltd. and the VOC Port Trust - a major blemish on India's port privatisation programme • Adverse effects on infrastructural and operational progress at the terminal and in the port as a whole • Diminished container handling vis-à-vis handling potential
Lack of Upgradation and Underutilisation of Physical Infrastructure	• Modernisation, upgradation and replacement of equipment installed at the PSA-Sical Container Terminal • Equipment additions due at the PSA-Sical Container Terminal • Current litigation on the dispute between VOC Port Trust and PSA-Sical Terminals Ltd., as well as fallacies pertaining to the contract are seen as major reasons behind infrastructural and operational glitches • Geographical deviation between both the terminals - a disadvantage • Frequent power cuts coupled with lack of backup power leading to idling of gantry cranes, thereby affecting ship productivity and hence overall trade operations
Inadequacies in Infrastructural Facilities/ Equipment	• Insufficient number of cranes at the PSA-Sical Container Terminal vis-à-vis cargo handled • Operational inefficiencies in terms of diminished moves per hour for existing cranes • ICEGATE issue - Slow system speed and recurrence of system breakdown • Need for fixed scanner to become fully operational in the longer run • Inadequate number of rakes for evacuation • Insufficient connectivity (lack of railway lines) with the major ICDs such as Bangalore and Coimbatore
Dearth of Container Freight Stations Having 24/7 Operations	• Lack of adequate number of CFSs with 24/7 operations • Need for at least three CFSs with 24/7 operations to ensure seamless operations
Customs Related Regulatory Issues Faced	• Non-approval of self-sealing of containers • Ambiguity in imposition of import duties • Instances of duty enhancement even on non-dutiable goods • Delays in movement of imported cargo from terminal to CFS • Shortage of boarding officers • Hassles in obtaining movement permission from customs

The contractual fallacies arising out of the agreement between the V.O. Chidambaranar (VOC) Port Trust and the terminal operator (PSA-Sical Terminals Ltd.) have been at the heart of majority of the problems faced by the port, especially as far as replacement and introduction of equipment, and enhancing cargo handling capacities are concerned. The various infrastructural, operational and regulatory issues that the VOC port faces currently have been summarized in the following paragraphs.

Royalty/Revenue Share Issue between PSA-Sical Terminals Ltd. and VOC Port Trust

Chronology of Key Events	
1997	Port privatization programme flagged off in India
1999	Commencement of operations at the PSA-Sical Container Terminal
2002	TAMP slashed rates for services provided by 15 per cent
2003	The Ministry of Shipping issued a policy disallowing royalty/revenue share, paid by private terminal operators to the government-owned ports, to be treated as a cost item while setting tariffs
2003	Litigation between VOC Port Trust and PSA-Sical Terminals Ltd.
2005	PSA-Sical Terminals Ltd. submitted a proposal to the central government asking for full royalty to be permitted as a pass-through in tariffs, which was subsequently rejected
2006	TAMP slashed rates for services provided by 54 per cent
2008	TAMP slashed rates for services provided by 34 per cent
2011	PSA-Sical Terminals Ltd secured a stay from the district court in Tuticorin to freeze the contractually-mandated annual royalty payments to the VOC Port Trust at the level set for 2011 as part of the 30-year contract
2013	PSA-Sical Terminals Ltd. resorted to arbitration to sort out tariff issues
2014	Arbitration award given by arbitration panel specifying that PSA-Sical Terminals should be allowed to move to a revenue sharing format from a royalty model
2015	Advice of Attorney General to scrap the PSA-Sical container terminal and terminate licence agreement
2015	Stay order by Madras High Court on empty container handling restrictions imposed by PSA-Sical Terminals Ltd.
2016	Arbitration award upheld by District court, giving PSA-Sical container terminal a window to move to a revenue sharing model



The complications between PSA-Sical Terminals Ltd. and VOC Port Trust pertaining to the royalty/revenue share has been a major blemish on India's port privatisation programme, since it opened the port sector to private funds in 1997. PSA-Sical Terminals Ltd. has been running the container terminal at VO Chidambaranar Port (erstwhile Tuticorin Port Trust) since 1999. The inception of the longstanding issue over tariff, between the port and the terminal operator can be traced back to 2003, when the Ministry of Shipping issued a policy guideline barring private operators running terminals at major ports from treating royalty/revenue share paid to the port as a cost item for fixing tariffs. The policy was seen as a preventive measure to discourage private terminal operators from quoting a high royalty/revenue share to win contracts and then recovering the same from the users. Private operators which started operations prior to 2003, including PSA, opposed this development, stating that the new development threatened to make their terminals commercially unviable. An amendment from the Ministry of Shipping entailing allowance of royalty/revenue share to be treated as a cost item followed, but the extent of pass-through was limited to the maximum quoted by the second highest bidder in the auction, along with a clause directing termination of the arrangement after affected terminals started making profits. PSA-Sical Terminals Ltd. opposed this arrangement, and submitted a proposal to the central government demanding for the entire royalty amount to be paid as a pass-through in tariffs, which was subsequently rejected.

PSA-Sical Terminals Ltd. over the years have also made three attempts to increase the rates for services provided at the terminal. However, each time TAMP slashed rates –by 15 per cent in 2002, 54 per cent in 2006 and 34 per cent in 2008 -which was not implemented by PSA-Sical Terminals Ltd. by securing stay orders from the Madras High Court.

Year	Amount (INR)
1999 (First Year of Operations)	102
2010	1969
2028 (Final Year of Operations)	5178

Table 3.6. Royalty Payable as per Contract

In October 2011, PSA further secured a stay order from the district court in Tuticorin to freeze annual royalty payments at the level set for 2011 i.e. INR 1,969 per container. The royalty payable by PSA increases by around 20 per cent every year. Per container royalty payable was INR 102 in the first year of operations and is slated to reach INR 5,178 in the final year of operation i.e. 2028. Following the grant of stay by the district court, the port had appealed at the Madras High Court to vacate the same.

In 2013, PSA resorted to arbitration to sort out the tariff issues through private dispute resolution, and in 2014, the arbitration panel gave an arbitral award specifying that PSA-Sical Terminals Ltd. should be allowed to move to a revenue share format from a royalty model, by adopting the revenue share of 55.19 per cent quoted by ABG Container Handling Pvt. Ltd. in September 2012 for the second container terminal at VOC port. VOC Port Trust filed an appeal under Section 34 in the Madras High Court challenging the arbitration panel's award, the decision on which is pending.

In August 2015, the Attorney General advised that the VOC Port Trust may consider termination of the licence agreement with PSA-Sical Terminals Ltd. and claim compensation if deemed fit. During the latter part of the year, the move count restrictions imposed by the terminal operator on import of empty containers was stayed by the Madras High Court. The company had a dispute with the VOC Port Trust on royalty rates and had contemplated the reduction of empty container handling to 5 per cent of the total unit of containers. A stay order on such restrictions was imposed post the submission of a petition by the Tuticorin Ship Agents Association.

The aforementioned events, over the years, have constantly marred infrastructural and operational progress at the PSA-Sical container terminal. Utilisation of existing infrastructure, modernisation and replacement of equipment, addition of new and modern equipment to increase efficiency as well as ensure an upscale in container handling capacity, as per potential, has taken a backseat over the years, a situation which needs to change in as minimal a timeframe as possible.

In a recent development, in February 2016, the district court rejected the petition filed by VOCPT challenging the arbitration panel's award allowing PSA-Sical container terminal to move to a revenue

share model. This migration from royalty to a revenue sharing model, if implemented, might provide PSA-Sical container terminal the required impetus to achieve increased capacities and desired operational efficiencies. However, constant efforts would be required to ensure desired improvements in infrastructural capacity and traffic handled at the port.

Lack of Upgradation and Underutilisation of Physical Infrastructure

Since the inception of operations in 1999, container handling at the PSA-Sical container terminal has been done with the help of three Quay Cranes (QCs) operating at the terminal (of which only two are in operation now) and eight Rubber-Tyre Gantry (RTG) cranes at the storage area. The terminal requires replacement and modernization of equipment, as per contract, to increase efficiency as well as additional equipment and process investments for achieving a higher cargo handling capacity. However, the current litigation between the port trust and the terminal operator, as well as fallacies pertaining to the contract, have come in the way of such developments. Further, the port also displays a quay length-draft imbalance and also faces a geographical challenge barring it from having terminals at a continuous stretch.

As a contractual obligation, PSA is slated to go through replacement of equipment by 2019, entailing estimated investments to the tune of INR 120-140 Crore. However, as the port trust and terminal operator are under litigation, progress towards that end has been substantially affected, as no upgradation is potentially possible until the issue of litigation is solved.

Secondly, while contractually PSA is supposed to give an annual throughput of 3,00,000 TEUs, the actual potential of the terminal is considerably more. The terminal has handled 5.13 lakh TEUs in 2014-15 and has the capacity to increase the same to 10 lakh TEUS annually, given required equipment additions are made. There is a requirement of two more cranes on the quay length to achieve the possible annual throughput of 10,00,000 TEUs but, due to contractual ambiguities, such additions have not been possible. The issues need to be resolved pertaining to the contract to enable the required upgradation to achieve potential growth in the number of TEUs handled as well as overall efficiency of the terminal.

Thirdly, at the VOC port, the PSA-Sical container terminal, with a longer quay length of 370 metres has a lesser draft of 10.9 metres, and the other terminal (DBGT) having a shorter quay length i.e. 345 metres possesses a deeper draft of 12.8 metres. Larger vessels (with higher DWT) calling on the port require deeper draft and have longer Length Overall (LOA). Due to the above imbalance, the port often faces problems in berthing such ships.

Particulars	PSA-Sical	DBGT
Quay Length	370 metres	345 metres
Draft	10.9 metres	12.8 metres

Table 3.7. Draft Vs. Quay Length – Container Terminals at VOCPT

Further, the quay is not a straight stretch and the geographical deviation between both the terminals is a disadvantage the port faces to accommodate ships. Both the terminals face problems in accommodating more than one vessel at a time on the quay. The resultant increase in berth stay as well as underutilisation of quay space leads to overall inefficiency and reduced productivity at the port.

Finally, the port faces the problem of frequent power cuts which sufficiently affects terminal operations. Gantry cranes at the Tuticorin port do not have back up power, which leads to idling of such cranes during power cuts. Therefore, ship-to-shore movements and vice versa get stalled, which considerably affects ship productivity and hence overall trade operations. The various impediments entailed by the aforementioned issue can be summarised as follows:

- Increase in vessel stay resulting in adverse effects on the window for waiting vessels
- Inflated berth hire charges incurred by vessels
- To make up for the lost time, vessels speed up and sail at an uneconomical pace, thereby leading to increased fuel consumption and, therefore, increased costs for vessel operators
- Vessels have to cut down on moves resulting in underutilisation of space in spite of cargo availability; it also leads to shutout of containers from

[1] *Source: Primary Information from PSA Port Office in Tuticorin*

feeder vessels

- Sailing delays, from Tuticorin to Colombo, result in misconnection of mother vessels and thereby delivery of cargo gets deferred by a minimum timeframe of one week
- Delayed sailing also results in the release of the Bill of Lading (BL), which further delays negotiation procedures of exporters

Inadequacies in Infrastructural Facilities/ Equipment

Certain inadequacies and inefficiencies were observed as far as the facilities and equipment used at the VOC port are concerned, which have been highlighted below.

The foremost issue is the inadequacy in the number of cranes in use at the PSA-Sical container terminal. According to the contract between PSA-Sical Terminals Ltd. and VOC Port Trust, the PSA Sical container terminal is required to have a minimum of three QCs at the quay and eight RTG cranes at the storage area , which the terminal currently maintains. It is insufficient given the amount of cargo the terminal currently handles. It also requires equipment addition and modernisation to meet the potential growth in traffic it is expected to see in the near future, given its capacity. The terminal faces two major issues i.e. contractual inadequacies leading to a lesser number of QCs/RTGs vis-à-vis the actual requirement and operational inefficiencies, in the form of diminished moves per crane per hour. As per concerned stakeholders, one QC every 80-100 metres is considered as a standard international practice. Therefore, with a quay length of 370 metres, four QCs can potentially be operated at the PSA-Sical container terminal. Further, three RTG cranes per QC is internationally considered as adequate. This calculation necessitates the use of nine RTG cranes, but the actual number available is just eight, out of which two cranes are under repair. As far as operational standards are concerned, the average moves per QC per hour at the VOC port— cumulatively recording 51 moves per hour for the three QCs at the terminal—is considerably below the international average of 22 . Subsequently, the international standard of moves per hour for RTG cranes is 12, while at the PSA-Sical container terminal it is ten. This under-utilisation prevents the terminal from achieving an additional throughput of approximately 1,00,000 TEUs through its existing infrastructure, as is depicted in the table 3.8:

Approximate Moves per Hour	Approximate Moves in a Year	Total TEUs Handled	TEU Handling Potential Through Capacity Utilisation as per International Benchmarks
Quay Crane (2014-15)			
51	354,516	518,241	670,665
RTG Crane (2014-15)			
90	709,032	514,331	617,317

Table 3.8. PSA-Sical Container Terminal - Terminal Utilisation vis-à-vis Potential

Secondly, the port frequently faces the problems of slow system speed and system breakdowns, especially during peak hours, leading to delays in online processing of the Shipping Bill and the Bill Of Entry (BoE) by ICEGATE. Delays in the release of the Export Promotion Copy due to the unavailability of adequate quality printers is also a regular occurrence.

Thirdly, the VOC port has one mobile scanner for import and export cargo. However, the installation of a fixed scanner would go a long way in further easing congestion and increasing operational efficiency. The project has been facing delays in completion and needs to be made operational in the longer run.

Finally, inadequacies in infrastructural facilities for evacuation from the port is a major problem faced by the VOC port. Currently, only a single railway line is available for evacuation from the VOC port, with

[2] *Commonly Applied Published Benchmarking Standards viz. "World Container Terminals" Drewry, 1998; · "Containerisation International Yearbook" 1998; "Global Container Terminals" Drewry, 2002.*

[3] *Source: Primary Field Information*

[4] *10 Wheel Truck (22 feet), Source: www.trucksuvidha.com*

rakes catering to bulk cargo having an evacuation capacity of only 1500 tonnes. In 2014-15, 8.6 MT of thermal coal was handled at the VOC port and the share of bulk cargo vis-à-vis overall cargo handled was approximately 30 per cent. The evacuation of such cargo was primarily done through trucks. However, while one truck can carry between 15-20 tonnes of bulk cargo, a rake is capable of handling 100 times more. Therefore, the number of rakes needs to be augmented to facilitate faster evacuation of bulk cargo. Further, there is limited access to rakes for container cargo, which is majorly handled at the VOC port, as the port has no railway connectivity i.e. no rail lines from major ICDs such as Bangalore and Coimbatore among others. Therefore, new railway lines need to be immediately added to create connectivity between the major ICDs and the port.

Dearth of Container Freight Stations Having 24/7 Operations

The equipment requirement in a CFS is not particularly high. However, the 24/7 functioning of a CFS is extremely crucial. There is a lack of such CFSs in Tuticorin as per stakeholders. Out of the 14 CFSs at the VOC port, only one i.e. CONCOR CFS ensures 24/7 operations. To ensure desired operational results, it is imperative to increase the number of CFSs having 24/7 operations to at least three as per experts.

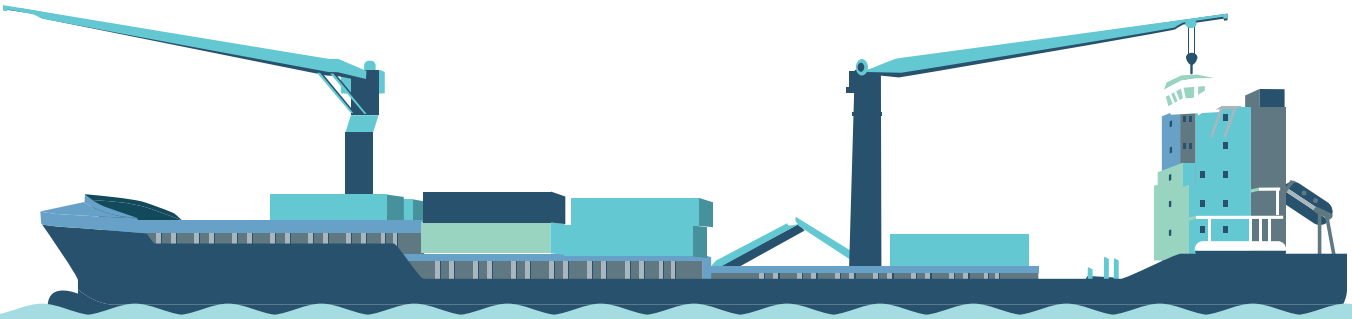
Customs Related Regulatory Issues Faced

Customs related issues such as non-approval of self-sealing of containers, excess duty on imports and delays in movement of imported cargo from the terminal to the CFS are frequently reported at the VOC port.

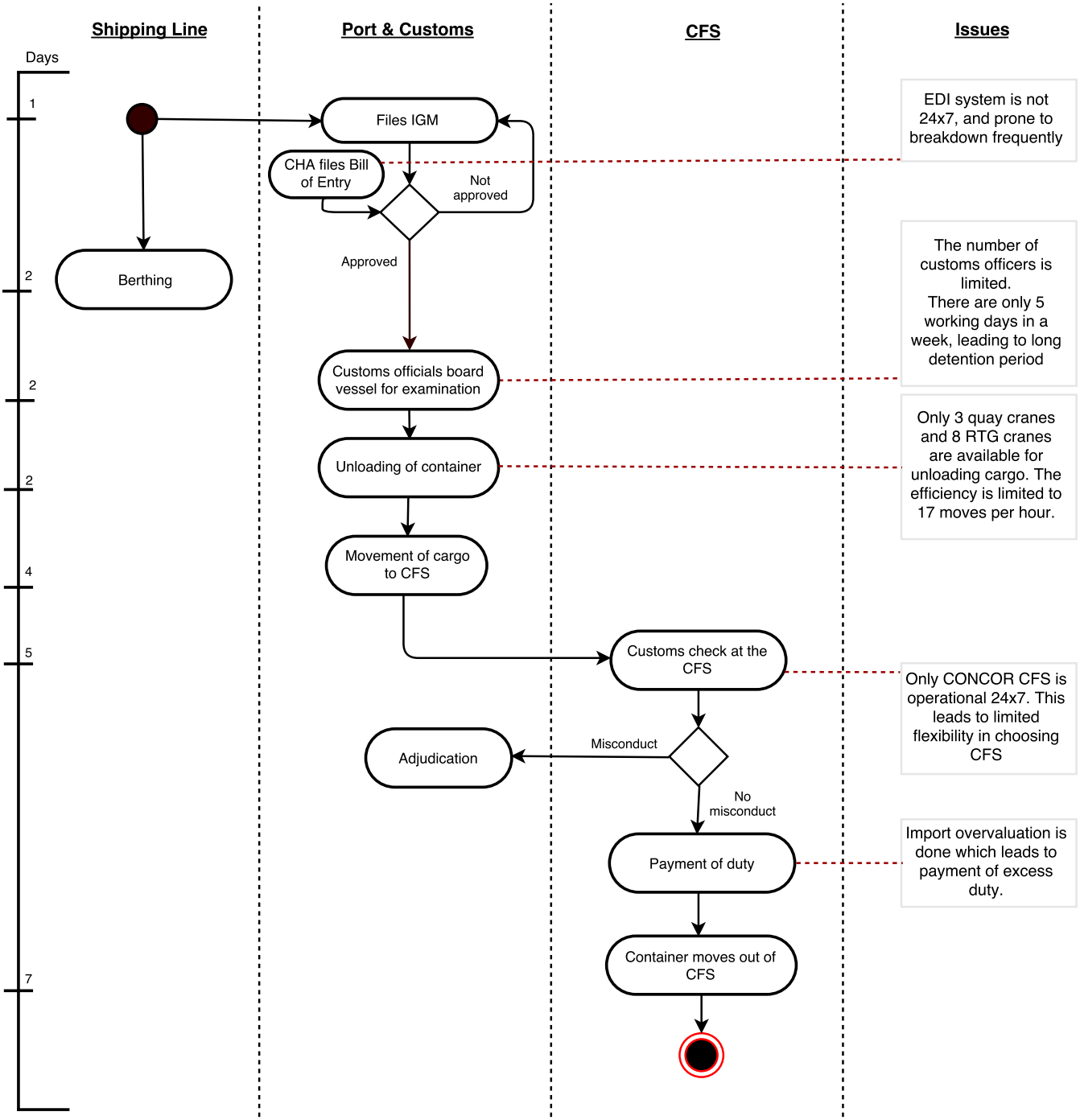
Despite a provision in the customs EDI system offering a self-sealing facility for manufacturer exporters (shipping bill in "S" category) after obtaining permission from customs authorities, there have been frequent cases of customs authorities abstaining from approving such self-sealing. Hence, manufacturer exporters are unable to avail the facility of self-sealing at the VOC port though other customs commissionerates are extending this facility to provide fillip to exports.

As far as imports are concerned, charging of excess duty by customs officials has been frequently reported by importers. They regularly pay excess duty owing to ambiguities in the determination of assessing value for calculating duty. Instances of duty enhancement even on non-dutiable goods have been reported by the importers. Such impediments lead to adverse effects on trade, as incremental duty payments mean inflated costs further leading to trading of goods at uncompetitive prices in the market.

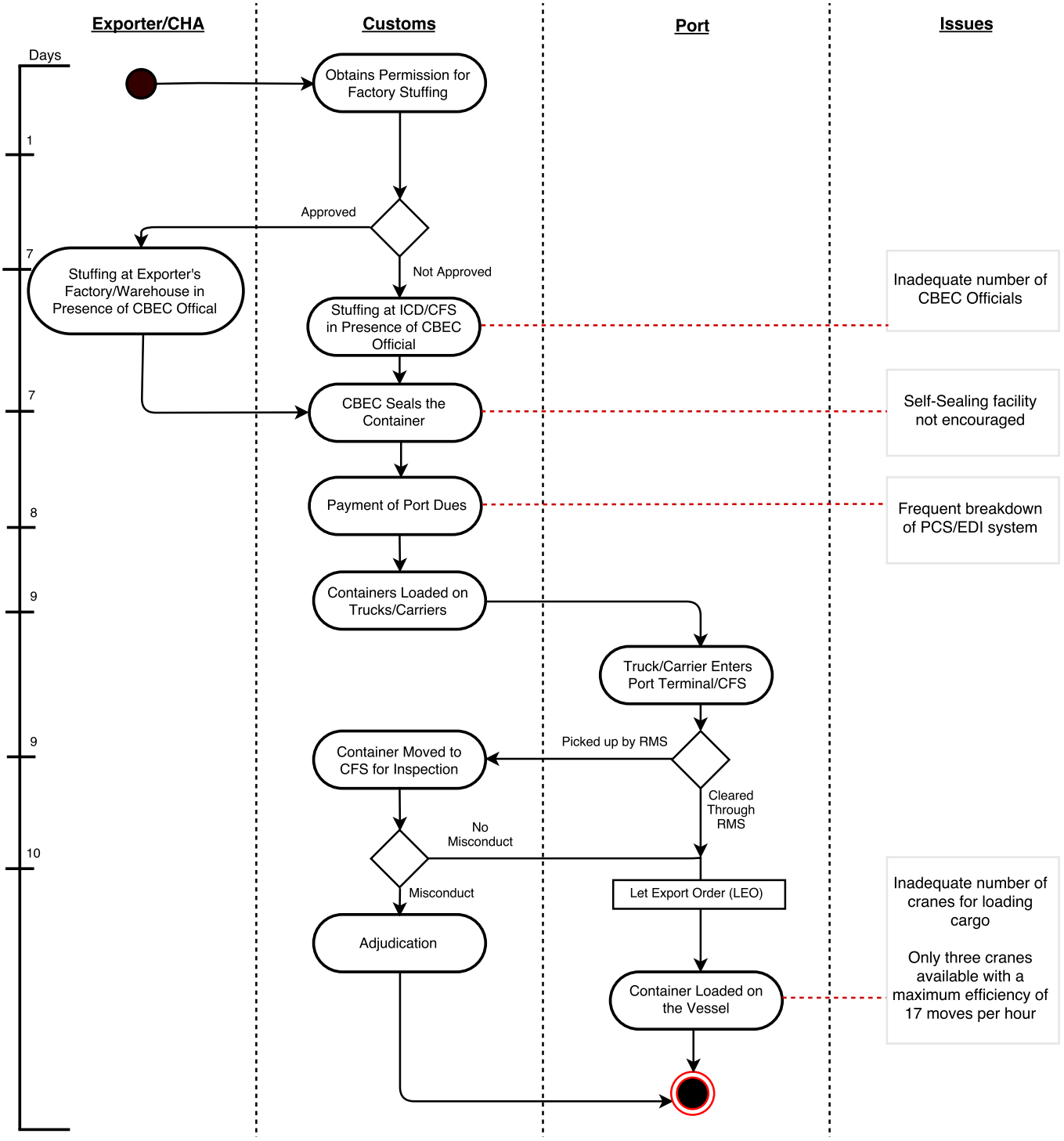
Further, delayed movement of imported cargo, from the terminal to the CFS, leads to hassles and unwanted cost implications for the importers. As a practice, post the docking of a vessel, the boarding officer boards the vessel and henceforth, the RMS makes a random selection of containers for scanning, which further have to be taken to CFS for the procedure to complete. For this, movement permission has to be obtained from the customs department. The foremost issue faced is the shortage of boarding officers, which leads to long detention periods for vessels before the containers can be unloaded. Obtaining movement permission from customs is also a cumbersome process as permissions are not given on weekends, thereby leading to increased demurrage costs.



Movement of Cargo at VOC Port - Import



Movement of Cargo at VOC Port - Export



3.4.2. Plan of Action

Recommendations and Indicative Plan of Action	
Fast Resolution of Tariff Issue between PSA-Sical Terminals Ltd. and the VOC Port Trust	• Resolution of tariff issues at the earliest • Introduction of new cranes • Replacement of equipment • Realisation of container handling potential of 10,00,000 TEUs
Diversification of Cargo Handled and Construction of Requisite Infrastructure	• Diversification of cargo profile • New berths by private players • Increased evacuation infrastructure (for example increased rail connectivity)
Addressing the Issue of Power	• Arrangement for adequate backup power via diesel generators by the port • Employing reputed vendors on contract basis for power generation through diesel generators
Encouragement for Self-Sealing of Containers	• Encouragement for self-sealing of containers, after obtaining necessary permission from customs • Use of scanners to check for further misconduct
Single Window Integration of Various Processes	• Integration of PCS, ICES, testing authorities, etc. under a single server so as to prevent duplication of work • Streamlining clearance procedures through single window set-ups

Fast Resolution of Tariff Issue between PSA-Sical Terminals Ltd. and the VOC Port

The longstanding tariff issue between PSA-Sical Terminals Ltd. and the VOC Port Trust has had an adverse effect on the growth potential of the terminal and therefore the port as a whole. The ongoing litigation has ensured that infrastructural developments, such as addition of more cranes, as well as the modernisation and replacement of existing equipment has taken a hit, which is sufficiently bringing down the productivity and traffic handling capacity of the port.

The royalty-revenue share model adopted at the ports needs to go through amendments, as issues arising out of the model have not only been noticed at the VOC port but also at the NSICT (DP World Mumbai). The issues faced are mostly resultant of the ceiling tariff set by TAMP which is inimical to the interests of private operators. This ceiling tariff is currently based on 16 per cent Return on Capital Employed (ROCE) and is not subject to revision even in the case of volatility in traffic. Periodic revisions in tariffs by TAMP should take care of the increasing royalty paid to the port. Tariff could be validated at given performance standards (such as increase in number of crane moves or higher number of containers handled) and specified to reflect operational efficiencies.

As an alternative measure, different revenue-sharing models in PPP projects, such as the one followed at the DGBT Terminal (VOC Port) can be considered. At present, the highest revenue share (quoted by DBGT) at the VOC Port is 54.6 per cent. Apart from this, there is 35-40 per cent general revenue share and 26.55 per cent share in equipment revenue. This model eliminates the possibility of stagnant rates in relation to the royalty paid by private operators.

Finally, there is requirement for contractual revisions in container handling targets at the PSA-Sical container terminal through complete realisation of infrastructural and operational potential. The terminal is contractually obligated to handle 300,000 TEUs and is allowed to have only three QCs and eight RTG cranes. Additional QCs and RTG cranes can go a long way in achieving 10,00,000 TEUs, which is the actual potential at the terminal. Therefore, revision of the contract to incorporate provisions for more infrastructural facilities at the terminal, as well as increased container handling targets, would go a long way in augmenting the efficiency and productivity of the VOC port.

Diversification of Cargo Handled and Construction of Requisite Infrastructure

Diversification of cargo handling profile is imperative for the VOC Port to justify the revenue losses incurred in the litigation between PSA-Sical Terminals Ltd. and the port. The port already handles considerable bulk cargo by volume, though the share is only 6 per cent in value terms. Further diversification is required to achieve overall targets in the longer term.

The cargo diversification process needs to be further complemented with addition of infrastructural facilities. For example, separate berths need to be constructed involving private players on specific revenue sharing models. Additions in the form of new cranes and railway lines are imperative to achieve future cargo handling and evacuation targets.

Addressing the Issue of Power

As indicated by experts, the Concession Agreement mandates supply of power by the port to the terminal. Therefore, the VOC Port needs to arrange adequate backup power via diesel generators to ensure uninterrupted power supply. The port needs to deliberate on roping in reputed vendors such as Wärtsilä, Powerica, Kirloskar Electric, etc. on contract basis for power generation through diesel generators (ranging from around 1 MV to 6 MV). This would go a long way in ensuring continuity of port operations during power cuts, and hence benefit trade in a big way.

Encouragement for Self-Sealing of Containers

Due to the limitations in number of customs officials at the VOC port, factory stuffing is not always a possibility. This results in long detention period for cargo in the factory. Since an RMS system is already in place, self-sealing of containers, after obtaining necessary permission from customs authorities, should be encouraged. The port already has a scanner in place to check for any further misconduct.

Single Window Integration of Various Processes

A commodity undergoes various checks before being traded in or out of the country. This includes filing documents, verification of permits, testing (at various facilities such as FSSAI), physical quarantine (in case of agricultural goods) to the clearances given by ICDs and CFSs.

Some facilities, such as testing labs, are not located in Tuticorin and cargo for testing has to be sent to Chennai for the purpose. This entails a time consuming procedure. For instance, it takes seven days to get a test report from FSSAI for pulses, and 14 days for dates.

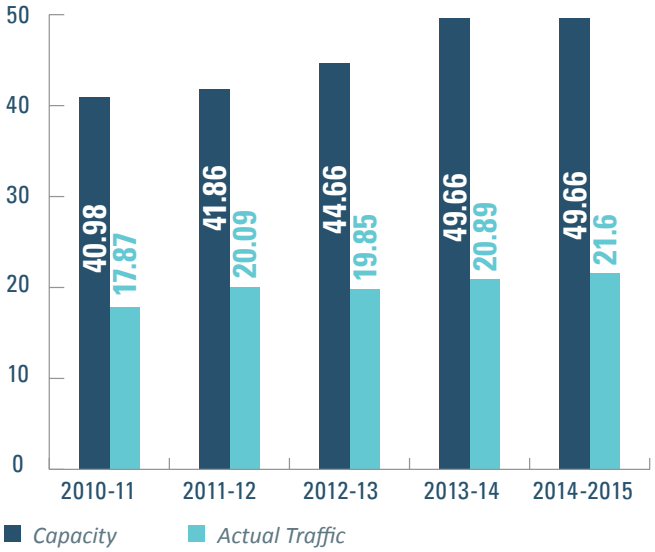
There is a need for PCS, ICES, testing authorities, etc. to be integrated under a single server so as to prevent duplication of work.

COCHIN PORT TRUST (CoPT)

Cochin Port

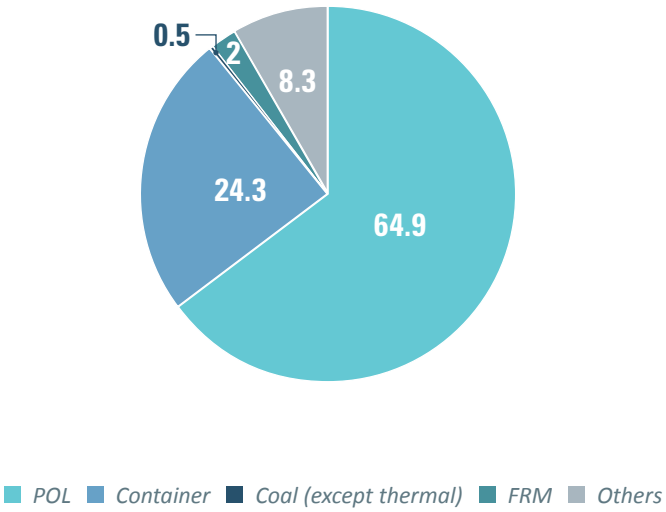
is one of the major ports on the western coastline of India in the state of Kerala. It is located at the Wellington Island and has been a very important port historically. The port derives its relevance from traditionally being one of the principal drivers of the local economic activity. Around 97 per cent of the total traffic volume from the Cochin port is accounted by Kerala, though the hinterland of the port stretches to parts of Tamil Nadu and Karnataka. Cochin port is spread over an area of 827 hectares.

Year-on-Year Traffic



Traffic Handled at CoPT (in MT)

Cargo Profile



Cargo Handled by CoPT in 2014-15 (Percentage)

Infrastructure

Berths	Draft (m)	Length (m)
14 berths	10.5 - 12.5	430 - 917
1 SPM	21	-

Cargo Handling Equipment

Equipment	Number	Capacity per Crane (Tonnes)
Quay Cranes	4	65
Mobile Harbour Cranes	2	100
RTGC	14	60

Container Cargo Traffic (TEUs)

2013-2014	4,162,000
2014-2015	4,467,000

Storage

Particulars	Storage Capacity
Transit Shed	25,040 sq. m.
Warehouse Area	1,05,000 sq. m.
Open Area Storage	7, 87, 840 sq. m.

Connectivity

Road :
NH-41

Railway :
3 Lines

ICD :
Irrugur, Coimbatore

3.5. Cochin Port Trust (CoPT)

3.5.1. Challenges

Major Issues Faced	
Underutilisation of Vallarpadam International Container Transhipment Terminal (ICTT)	• Only 30 per cent capacity utilisation of the terminal • Owing to lack of cargo, only phase one of the ICTT is complete and operational • Underperformance majorly attributed to high tariff, lack of clarity in governing laws and delays faced in obtaining duty drawback
Higher Tariffs and Uncompetitive Costs	• Tariff at the CoPT- almost three times that of other major ports • Traders from the industrial centres of Coimbatore, Tirupur, Pollachi, Salem and Bengaluru increasingly preferring Tuticorin port over the CoPT
Inadequate Connectivity to the Irugur Inland Container Depot (ICD)	• Exporters from Coimbatore, Mysore, Tirupur and Pollachi divert to Tuticorin in spite of Cochin being the nearest port • Inadequate road and rail connectivity from the Irugur ICD to CoPT leading to inflated transportation costs • Road transportation faces the issues of heavy congestion at the Walayar check post as well as inflated tariffs • More railway lines needed to aid increased cargo handling, reduce delays as well as ease the congestion at Walayar check post
Issues with Risk Management System (RMS) for Exports	• Factory stuffed containers having the CBEC seal get picked up by the RMS and are subsequently opened for inspection • Re-opening of containers is especially cumbersome in the case of perishable cargo • Increased dwell time of cargo due to duplication of procedures • Increased risk of damages to cargo
Ambiguities in Import Valuation	• Ambiguities over calculation of duty leading to increased duty payments • Increased duty payments affecting the competitiveness of the importers • The port runs the risk of losing these importers to other ports and witnessing further drop in cargo handled
Reduction in Number of Free Days	• Reduction in the number of free days from 7 to 5 w.e.f. September 1, 2015, (followed by subsequent reduction of the same to 3 days w.e.f. December 1, 2015) to bring down dwell time • Such reductions mean augmented costs for the importers in addition to already high rates prevailing at the port • A threat to the competitiveness of the port
Procedural Delays	• Need for speedy clearance of imports from the port • Need for scanners • Frequent EDI breakdowns • Shortage of adequate number of customs officers, especially at the CFS • Lack of 24/7 operations at the CFS • Delays in obtaining test reports for certain cargo
Ambiguities over Stevedoring Policy	• The Stevedoring Policy to be decided by the port, and the implementation of the same is expected in March 2016 • Revenue share given to the port by the stevedores is expected to be passed on to the shipping lines in the form of inflated per tonnage cost, leading to considerable cost pressure for the shipping lines • Monopolisation of stevedoring companies selected by the port foreseen due to lack of competition • Private ports expected to benefit as this policy would not be applicable to these ports, thereby making them
Issues Related to Subleasing	• Current restrictions on subleasing leading to the withdrawal of private players from the port island • The development seen as a threat to the earning capacity of the port in the future

CoPT faces serious challenges in terms of increasing cargo traffic at the port. Standing at 30 per cent capacity utilisation, the total traffic handled by the port in 2014-15 was around 21.6 MT. A range of issues are attributed to the growing woes of the port. These include high tariff, ambiguous laws, connectivity issues and regulatory issues. The recent stevedoring policy of the government has also become a source of concern for the port, as discussed in detail. The port, owing to its geographical dividends, has various avenues of generating revenue, such as transhipment and cabotage, which are not being effectively utilized. The challenges faced by CoPT have been discussed below detail:

Underutilisation of Vallarpadam International Container Transhipment Terminal (ICTT)

In 2011, the Cochin Port Trust's (CoPT's) International Container Transhipment Terminal (ICTT) was established as the first international transhipment hub of the country, replacing the Rajiv Gandhi Container Terminal, which was handling transhipment cargo until ICTT came into operation. The terminal is operated by DP World, a Dubai based enterprise, under a public-private partnership (PPP) agreement for 30 years with the CoPT. The terminal was seen as a major step taken towards bringing back transhipment cargo to India as well as the potential driving force for the revival of the port. The INR 3,500 crore project was expected to mobilise the process of feeder vessels bringing containers for loading into larger mother ships thereby creating economies of scale, and lowering down freight costs and transit time for Indian shippers. However, the performance of the terminal has been far from expected levels. ICTT has continually failed to attract enough cargo to break even, standing only at 30 per cent capacity utilisation till date. Due to lack of cargo, only phase one of ICTT has been completed and the terminal has continually been underperforming. The losses incurred by the CoPT in 2014 have been to the tune of INR107.81crore, with ICTT weakening its financial standing further instead of bailing it out as was initially perceived. Various factors - negligible transhipment cargo handled, inadequate response on cabotage exemption granted by the government, increased competition from the Colombo port and the upcoming Vizhinjam terminal - are expected to add to the downhill movement of the terminal's overall performance. The reasons to which the performance failures of the terminal can be attributed to are multi-pronged:

Inadequate Draft for 'Mother' Vessels

Vessel	DWT	TEU	Draft (m)
Panamax	<65,000	5,000	12.4
Post-Panamax	80,000 - 100,000	9,000	18
Suez - max Ultra Large Container Ships	120,000 -200,000	12,000	20.1

Table 3.9. Types of Container Vessels at CoPT

The current draft at the ICTT Terminal is 14 metres, which sufficiently limits its possibilities of attracting transhipment cargo, as the trend among shipping lines is to increasingly operate larger vessels (or mother vessels), that only call at ports with deep drafts of 18 metres or more (Table 3.9). According to the PPP contract between the CoPT and the ICTT, the herculean task of capital and maintenance dredging was undertaken by the CoPT, which entails an expenditure of approximately INR 100 crore annually, adding to the woes of the port which is already suffering fgrom financial distress. Due to inconsistencies in incurring such capital expenditure, dredging activities have had to suffer, leading to insufficient draft and thereby rendering the terminal incapable of attracting mother vessels.

Shortcomings in Governing Laws

Ambiguities in regulatory framework, marked by anachronistic policies, give rise to confusion among the stakeholders. Firstly, the Customs Act, 1962, lacks provisions on container handling as well as clarity on handling of transhipment terminals. Further, the CoPT entered into a licence agreement with DP World for the extension of its container handling services through the development of ICTT on a build-operate-transfer (BOT) basis. As per the agreement between the CoPT and DP World, ICTT is governed by the Major Port Trusts Act, 1963. However, the terminal also enjoys SEZ status (under SEZ Act, 2005), which makes it immune to many customs rules. This has given rise to situations of ambiguity. For instance, as

per the Major Port Trusts Act, if a container is lying at the port for more than two months, the terminal operator has the option of auctioning it, instead of charging demurrage. Further, the terminal operator, in this case DP World, is mandated to aid the auction of the container and facilitate its movement to the CFS by bearing the charges. However, it was noticed that even after two months, DP world continues to charge demurrage from the unclaimed containers instead of auctioning it. Therefore, at the Vallarpadam ICTT, owing to the ambiguities over governing laws, the shipping lines are required to move the containers out of the port for auctioning. Under such a system, the cost implications on the shipping lines are considerable. Post incuring sufficient expenses by way of storage charges, payment of logistics costs associated with movement and auctioning of containers makes the process commercially unviable for them, as the proceeds from auction are not enough to cover for the overall expenses incurred.

Duty Drawback Pendency

Duty Drawback in India

Duty Drawback provisions are given under section 74 and 75 of the Customs Act, 1962. Section 74 allows the duty drawback on the re-export of duty paid goods. Section 75 allows the drawback on imported goods used in the manufacture of export goods.

In case of such goods which were earlier imported on payment of duty and are later exported within a specified period, the customs duty paid at the time of import of the goods, with certain reductions, can be claimed as duty drawback at the time of export of such goods. Such duty drawback is granted in terms of Section 74 of the Customs Act, 1962 read with Re-export of Imported Goods (Drawback of Customs Duty) Rules, 1995. For this purpose, the identity of export goods is cross verified with the particulars furnished at the time of import of such goods.

It has been observed that Indian exporters prefer shipping lines that use international ports, such as Colombo, for transhipment instead of Cochin port. The principal reason behind such an inclination has been the inordinate delays faced by the concerned traders in getting duty drawbacks at the CoPT.

The underlying impediment leading to the delays is that, in practice, an exporter does not become eligible for duty drawback on a transhipment container leaving one Indian port for another until it finally leaves Indian shores. For instance, if exports leave an Indian port, such as Chennai, and the transhipment is effected out of an international port such as Colombo, the duty drawback is processed early as the cargo already leaves Indian shores. On the contrary, if transhipment is carried out through Cochin, the exporter needs to wait till the cargo leaves Cochin, for processing of duty drawback to take effect. The resultant pendency sufficiently affects the choice of transhipment port, wherein a terminal like ICTT loses much of its potential transhipment business to international ports such as Colombo.

The Customs Act does not have any specification as to when the duty drawback should be processed, which can be seen as the root cause behind the issue. Further, in case of imported goods (Section 75 of the Customs Act), long delays in the examination of goods are faced along with various checks directed by the Additional Customs Commissioner (ACC), which result in sufficient delays in availing duty drawback.

Higher Tariffs and Uncompetitive Costs

The CoPT (ICTT) is one of the most expensive ports in the country; the tariff determined by TAMP for the port is almost three times higher as compared to any other major port. Lower volume of cargo handled, and the need for revenue generation for operations at the port have been the major reason behind such sky high tariffs.

Over the years, high tariffs have proved to be a major hindrance for vessels to call on this port as well as for Indian traders to export through this port. As a consequence, traders from the industrial centres of Coimbatore, Tirupur, Pollachi, Salem and Bengaluru have increasingly been preferring Tuticorin port over the CoPT.

A comparison of terminal tariffs at Cochin, Chennai and Tuticorin ports can be seen in the Table 3.10:

Particulars	DPW, Kochi (Prevalent Rates w.e.f. 01.01.2015.)	DPW, Chennai (Prevalent Rates w.e.f. 05.05.2011.)	PSA, Chennai (Prevalent Rates w.e.f. 06.05.2012.)	PSA, Tuticorin (Prevalent Rates w.e.f. 30.12.2008.)
Gantry Charges (per 20′ container)	50.01	14.64	22.63	11.37
Wharfage (Mty 20′)	2.73	0.84	1.29	0.61
Lift on/Lift off from Trailer (Full 20′)	12.47	3.54	5.45	3.19
Transport from Hook to Stack (Full20′)	5.84	6.41	9.86	6.33

Table 3.10. Comparison of Private Terminal Tariffs at Cochin, VOC and Chennai Ports (USD)

As is evident, costs incurred at Vallarpadam ICTT under majority of the heads are extremely uncompetitive vis-à-vis comparable private terminals.

Further, a comparison of charges for marine services between Cochin Port and Chennai Port has been depicted in the following table:

Particulars*	Cochin Port Trust	Chennai Port Trust
Port Dues	2,59,396	2,62,040
Berth Hire (Per Day)	78,903	99,786
Inward Pilotage Charges	3,03,019	1,98,401
Outward Pilotage Charges	3,63,019	1,98,401

**For GRT- 14162*

Table 3.11. Comparison of Marine Service Charges Payable at Cochin and Chennai Ports (INR)

While Chennai port has higher marine charges, it is still given preference over Cochin port by vessels due to lower terminal handling charges. Marine charges are incurred once, while terminal charges are a variable cost, depending on the numbers of days a vessel is berthed at the port and the amount of cargo handled. Minimising this variable component is of utmost importance to the shipping lines and is a major determinant for selection of ports, an area where the CoPT loses its competitiveness.

Inadequate Connectivity to the Irugur Inland Container Depot (ICD)

Exporters from Coimbatore, Mysore, Tirupur and Pollachi export through the Irugur ICD. While Cochin is the nearest port for these exporters, the preference for Tuticorin port over CoPT has been evident. Statistically, in 2014, a mere 5 per cent of the garments exported from Tirupur went through Kochi while about 70 per cent was exported through Tuticorin port.

This diversion of traffic can be attributed to inadequate road and rail connectivity from the Irugur ICD to the CoPT, which translates to increased transportation costs for merchants, thereby hampering the CoPT's competitiveness.

The issues associated with the two major modes of transportation have been analysed in isolation in the following sub-sections.

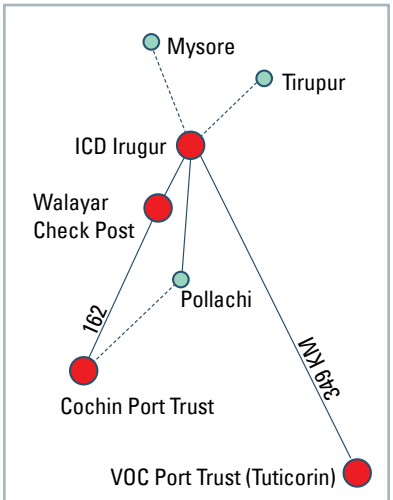


Fig. 3.2. ICD Irugur Corridor

Road

The Cochin port is connected to the Irugur ICD through NH-47. The Walayar Regional Transport Office (RTO) Check Post, bordering Kerala and Tamil Nadu, serves as the sole check post facilitating movement of trucks. The check post frequently experiences severe congestion, the minimum wait time for clearance of trucks being around 10-12 hours. The key impediments leading to such congestion and delays are as follows:

- Lack of infrastructural facilities such as scanners and weighbridges, leading to manual evaluation
- Presence of a mere three open counters, which is insufficient vis-à-vis volumes handled
- Shortage of staff
- Non-compliance by incoming trucks with respect to permissible weight limits to be carried are considerably frequent. According to RTO guidelines, the legal axle weight limit for a truck is 8 tonnes. However, many trucks coming through the Walayar check post carry more than the permissible weight limit. As a result, penalty charges become due to the RTO, and the associated procedures entail further holding up of such trucks.

In addition to the heavy congestion and time lags faced by traders at the Walayar check post, the tariffs are also on the higher side, which means inflated costs to be borne by them.

Rail

Inadequate rail connectivity between the Cochin port and the Irugur ICD has been a longstanding problem faced by the traders using the port. However, a Memorandum of Understanding (MoU) signed between the CoPT and Container Corporation of India Ltd. (CONCOR) made way for the first railway service from the Irugur ICD to Cochin Port on January 16, 2016. As of now, a single train is slated to leave Irugur on Saturdays and return from Cochin on Thursdays, a development seen as a major fillip to the Export-Import (EXIM) community encompassing Coimbatore district. However, in order to eliminate congestion at Walayar check post, avoid unnecessary delays and facilitate increased cargo traffic at the CoPT, increment in the number of railway lines becomes crucial to ensure to and fro movement of trains twice or even thrice a week.

Issues with Risk Management System (RMS) for Exports

For factory stuffing, the exporter obtains permission from the Customs Commissioner to stuff goods in his factory under the supervision of a Central Excise Official. Once stuffing is satisfactorily completed, the Central Excise Official seals the container, which is then taken to the port for export.

According to the Central Board of Excise and Customs (CBEC) Public Notice 14/2011, the containers sealed by a Central Excise Officer are not required to be opened for examination at the ports. However, in practice, it was observed that such sealed containers are being

Reasons for Factory Stuffed Containers being Picked Up for Examination by the RMS

The Risk Management Division of the Directorate General of Systems has explained the following as the reasons for the factory stuffed containers being picked up for examination:

I) In course of implementation of RMS (Export), it is observed that at the time of filing a check-list (Shipping Bills), full details are not being furnished by the exporters/Customs Broker at the stage of submission or the data is entered in inappropriate fields. Some instances are as cited below:

a) Exporters are not providing information as to whether the consignment is factory stuffed or otherwise; if yes, Seal Type i.e., whether Authorized/Self/Warehouse (A/S/W) or whether examined by Central Excise or otherwise at the submission stage, though specific fields are available in the declaration.

b) Exporters are not providing information about the claim of benefit under Chapter 3 of Foreign Trade Policy i.e., SFIS , VKGUY, FMS, FPS in the specified column of the Shipping Bill though a specific field namely 'Whether export under Reward Scheme' is available in the declaration. It is also observed that in many cases this intention of claim is mentioned as part of the Description or under Invoice Details.

II) If the exporter fails to provide the details mentioned at point (a) above, then the consignment may be selected for examination despite the fact that it has already been examined by the Central Excise Officers.

Source: Trade Facility No.38/2013, Office of the Commissioner of Customs, Cochin

picked up by the RMS, despite having the CBEC seal, and are subsequently being opened for inspection at the CFS. The Customs Commissioner, in the notice 'Trade Facility No.38/2013', has provided clarification for the same, which has been highlighted in the exhibit above.

Such re-opening of containers proves to be cumbersome, especially in the case of perishable cargo, as the Cochin CFS neither has the required facility nor any special provision to de-stuff and store reefer containers. Therefore,increased dwell time of cargo - sometimes up to as much as 19 days - due to duplication of inspection procedures and re-stuffing of cargo in the containers, forms a major operational glitch at the CoPT. Further, the process of de-stuffing and re-stuffing frequently leads to damage of cargo, translating to financial losses for the traders.

Ambiguities in Import Valuation

The import duty for goods arriving at Indian ports is determined by the customs department, and the duty amount is arrived at based on the assessable value of the imported goods. However, at the CoPT, it was reported that the duty value calculations, which are done at the discretion of the customs officers, entail ambiguous methods. Parameters such as "the market price of goods on to Indian shores", are considered, leading to increased duty payments by the importers. Such increased duty payments translate to unwarranted cost escalations on the importer's part. Consistent decline in amount of cargo handled is seen as the major reason behind the adoption of such practices at the port by the users. Increased duty payments have adverse effects on the competitiveness of the importers. Hence, a reassessment of the parameters for import valuation can be gauged so as to stave off importers from moving to others ports, causing further dip in cargo handled at the port.

Reduction in Number of Free Days

The reduction in the number of free days from 7 to 5, with effect from September 1, 2015 (followed by subsequent reduction of the same to 3 days, with effect from December 1, 2015), was done by TAMP after receiving a written letter from India Gateway Terminal Private Ltd. the Indian arm of DP World, seeking a decrease in free time at the port. It was seen by DP World as a necessary step to bring down dwell time and ensure considerable reductions in congestion at the terminal yard. The proposal highlighted that in order to handle the target volumes (including transhipment containers) the terminal required sufficiently higher ground slots, which was not possible given the high dwell time figures reported at the port.

On the flipside, reduction in free days mean augmented costs for the importers, and therefore the measure of TAMP to bring down free days has met considerable criticism from merchants and various trade bodies, who view this development as detrimental to the port's growth prospects. Higher number of free days was an incentive provided by the CoPT to attract cargo, and reduction of the same might divert a major portion of the import cargo to other ports as opined by experts. The rates are considerably higher at the CoPT as compared to competing international and national ports, and further additions to costs by way of increased rent paid by the importers on account of reduced free days is seen as a potential hindrance towards achieving cargo handling targets.

Procedural Delays

Delays faced at various stages often translate to increased costs for the importers and exporters using the port. Some of the more frequent issues faced have been summarised henceforth.

Firstly, ensuring speedy clearance of imports from the port is imperative. High levels of congestion are frequently reported at the port, leading to detention and increased costs for the importers as well as a decrease in the overall cargo handling capacity of the port. The absence of scanners at the port also adds to the woes, thereby resulting in unwanted dwell time

Secondly, the customs' Electronic Data Interchange (EDI) system functions only 5 days a week, despite there being a provision for 7 days accessibility. While

[1] 'Free days' refer to the period of time offered by the carrier to the merchant free of charge, covering both demurrage period and detention period, beyond which additional charges such as, but not limited to, demurrage and detention charges, will be due to the carrier.

[2]Dwell time is referred to the average time (in days) that a container stays in the shipyard

payments can be made on all 7 days, addressing errors or rectifying the system is done only 5 days a week. Further, the EDI system suffers frequent breakdowns, and for considerable periods. During the course of the study, instances of EDI breakdowns spanning up to 10 days were observed at the CoPT, thereby leading to slow processing at the port.

Thirdly, the shortage of adequate number of customs officers, especially at the CFS, as well as a lack of 24/7 operations at the CFS considerably affect timelines. Further, the absence of required facility for examination of goods selected through RMS leads to containers moving back to CFS. Subsequently, due to lack of officers for checking purposes, the detention period of a container at the CFS is longer. Additionally, RMS related issues for factory stuffed containers and ambiguities over de-stuffing and re-stuffing in case of self-sealing further give rise to delays.

Finally, for certain export commodities, such as rubber mats, obtaining sample test reports is a considerably time-consuming process, at times taking up as much as 3 months. In cases where there is a provision for availing duty drawback on such a commodity, the same gets delayed till the report is obtained.

Ambiguities over Stevedoring Policy

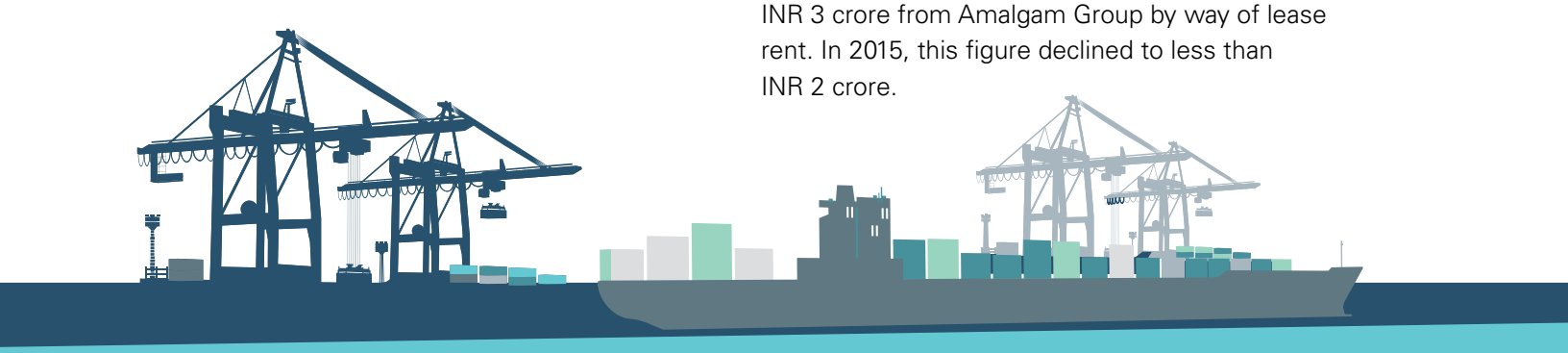
As per a directive from the Ministry of Shipping, the major ports have been mandated to call for tenders from stevedores. The Stevedoring Policy will be decided by the port, and the implementation of the same is expected in March 2016, as per experts. The process likely to be adopted for selection would entail stevedoring companies to submit their cost to the port, which is a percentage of their earnings paid to the port. Stevedoring companies submitting the highest revenue sharing bids would be shortlisted by the port. However, the revenue share given to the port by the stevedores is expected to be passed on to the shipping lines in the form of inflated per tonnage cost, leading to considerable cost pressure for the shipping lines. Further, the monopolisation of the stevedoring companies selected by the port, as foreseen by the shipping lines, would lead to inflated costs for them given the lack of competition. The private ports, therefore, are expected to benefit from this development as this policy would not be applicable to these ports, thereby making them more competitive in comparison to major ports such as the CoPT.

Issues Related to Subleasing

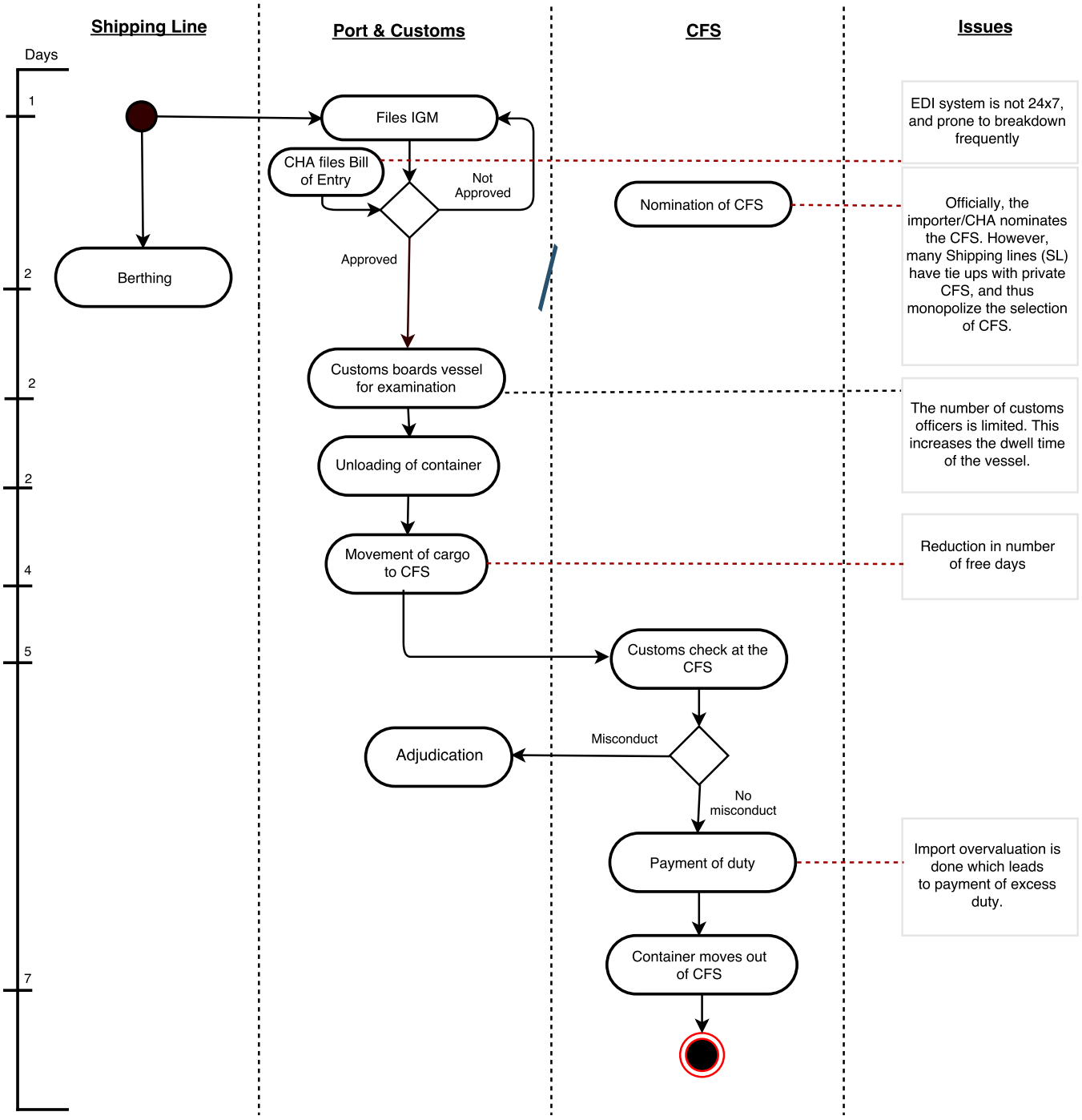
At the CoPT, the current restrictions on sub-leasing are leading to the withdrawal of private players from the port. The issues with this development can be highlighted taking the example of the Amalgam Group, which took land from the CoPT on lease for 30 years and further sub-leased it to Maersk Line because it did not require a considerable share of the land taken on lease for its own operations. The aforementioned timeline of 30 years is slated to end in March 2016. However, when Amalgam Group asked for an extension, the CoPT put a condition that extension of lease will only be permitted if land is not sub-leased. This development would entail the following consequences if exercised:

- **The shipping line (Maersk Line) will have to move out of the port premises and operate from another area far from the island**
- **If lease is not extended, Amalgam Group will withdraw office from the island (because it will be unable to bear the lease rent on its own) and this will lead to a loss in revenue to the port**

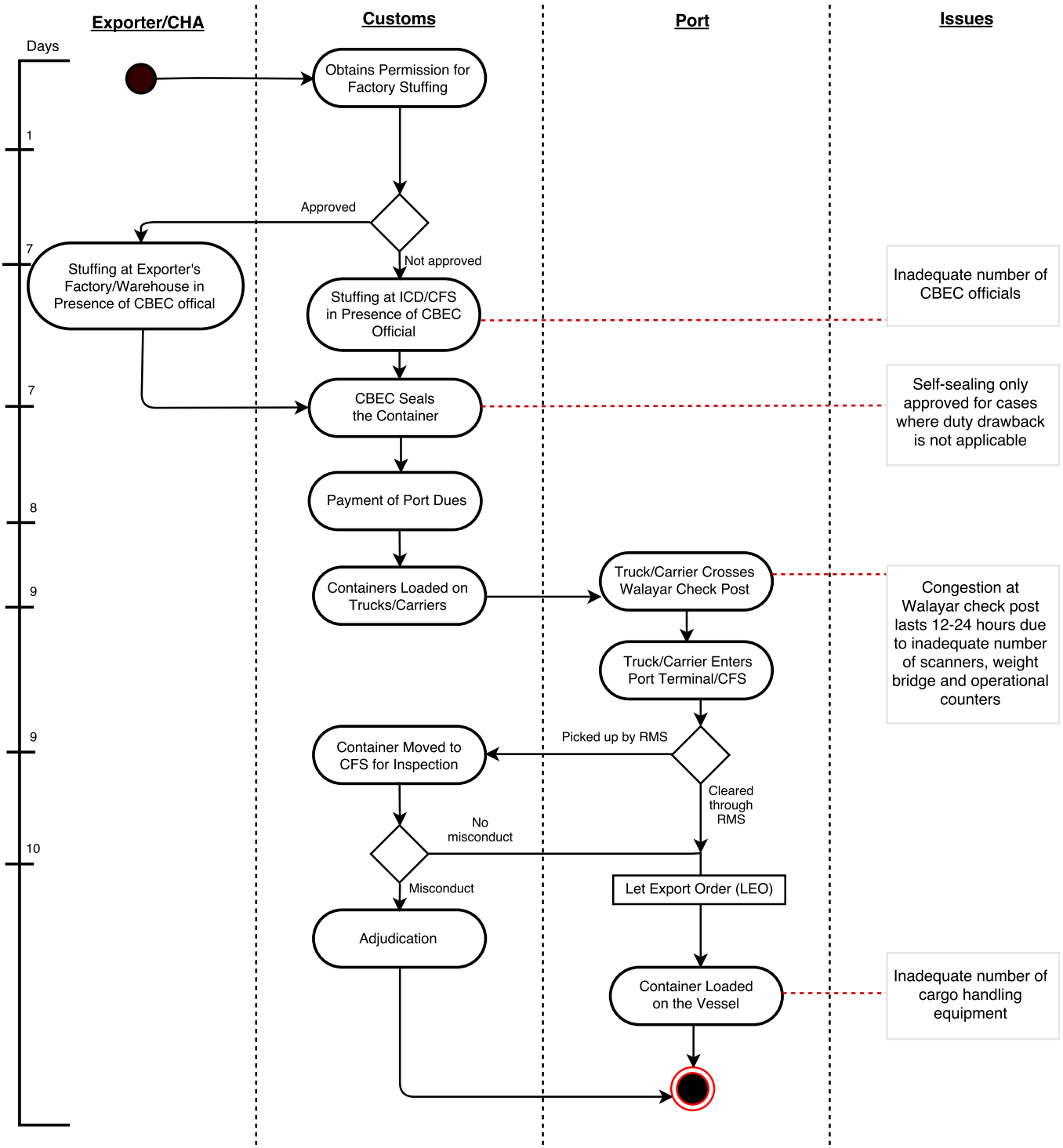
As is evident, restrictions on sub-letting do not promise to put the earning prospects of the port in good stead for the future. In 2014, the CoPT earned INR 3 crore from Amalgam Group by way of lease rent. In 2015, this figure declined to less than INR 2 crore.



Movement of Cargo at Cochin Port - Import



Movement of Cargo at Cochin Port - Export



3.5.2. Plan of Action

Recommendations and Indicative Plan of Action	
Tariff Elasticity	• Rationalization of tariff by TAMP • Focus on increasing volumes handled • Addressing captive cargo for revenue generation • Increasing overall competitiveness of the port
Improving Connectivity to the Port	• Opening an alternative check post at Gopalapuram (Pollachi) • Bringing down congestion at Walayar check post • Installation of scanners, addition of weigh-bridges, repair of the existing weigh-bridges and opening of more counters at Walayar check post • Increased number of rakes from the Irugur ICD to the CoPT
Encouraging Direct Port Delivery (DPD)	• Considering DPD for accredited clients and regular port users • Avoiding unnecessary hassles pertaining to cargo movement
Amendments to the Customs Act, 1962	• Addition of provision on container handling • Addition of specifications regarding handling of transhipment terminals • Incorporation of necessary revisions and amendments to suit the needs of the present times

Tariff Elasticity

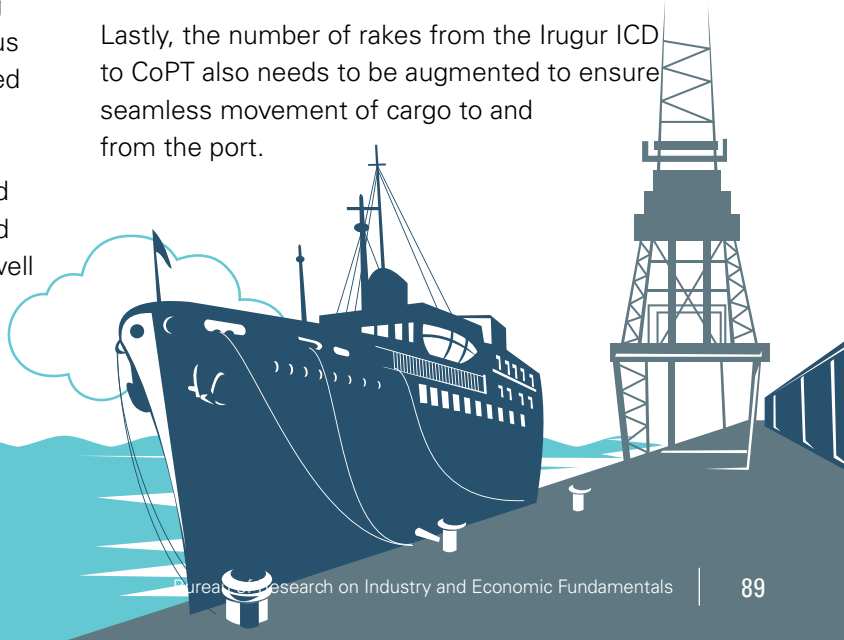
The CoPT (ICTT) hosts an advanced infrastructural set up which has continually remained underutilised, cargo handled at the terminal being dismally low vis-à-vis capacity. To meet the revenue requirements, high tariff has been levied by the port on the various services provided by it, which over the years has rendered the port uncompetitive. The resultant diversion of cargo to nearby ports such as Tuticorin and Chennai threatens to demean the overall growth prospects of the port. In order to facilitate cargo movement through the port, reductions in tariff need to be of utmost priority. An immediate measure can be addressing the captive cargo at the port, a potential avenue for generating revenue in the near term. For the longer term, focus on increased cargo handling coupled with measured steps taken by TAMP towards freeing liners from cost pressure through tariff cuts is imperative for the port to remain competitive, given the increased competition it is slated to face from neighbourhood ports such as Vizhinjam, Tuticorin and Chennai as well as international ports such as Colombo.

Improving Connectivity to the Port

To further mobilise connectivity to the port, opening of an alternative check post at Gopalapuram (Pollachi)—an additional route covering a distance of 160 kilometres from the CoPT - is required. This would go a long way in bringing down congestion at the Walayar check post.

Further, the existing Walayar check post needs to be made more efficient through installation of scanners for faster examination of containers and by ensuring minimal damage to goods. The check post also needs more weigh-bridges, repair of the existing ones and also the opening of more counters with competent staff.

Lastly, the number of rakes from the Irugur ICD to CoPT also needs to be augmented to ensure seamless movement of cargo to and from the port.



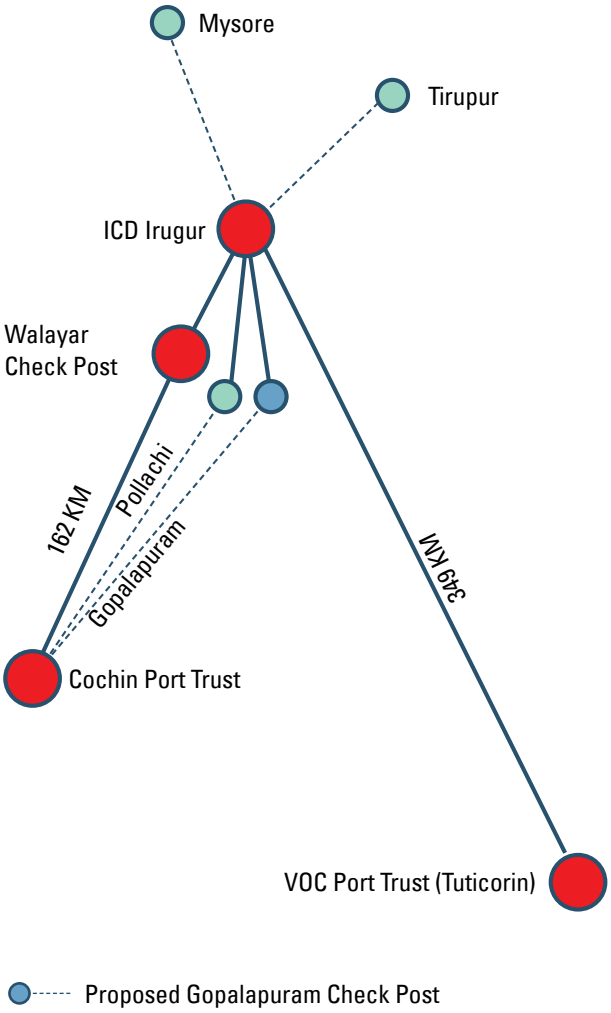


Fig. 3.3. ICD Irugur Corridor

Encouraging Direct Port Delivery

The compulsory movement of import and export containers to CFS, as mandated by the customs department, considerably inflates the transaction costs borne by the merchants apart from causing overall operational delays. Hence, the option of Direct Port Delivery (DPD) needs to be considered diligently, at least in the shorter term, given the low level of port utilisation (30 per cent) at this point in time. The option of DPD for accredited clients and regular port users would go a long way in ensuring the reduction of unnecessary hassles pertaining to cargo movement at the port.

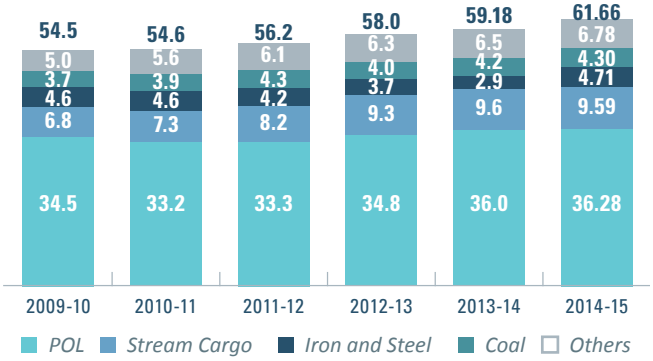
Amendments to the Customs Act, 1962

The present Customs Act dates back to 1962 and has not been subjected to amendments over the years in congruence with changing trends. For instance, it does not contain any provision on container handling. This lack of regulatory framework leads to the emergence of arbitrary legal procedures thereby leading to ambiguities which go on to hamper trade. Stakeholders at Kochi also pointed out the dearth of specifications regarding handling of transhipment terminals in the Act. For the CoPT, which majorly handles container cargo, and for terminals such as ICTT, which aim at becoming transshipment hubs, legal transparencies on the aforementioned lines forms a crucial aspect for achieving desired operational goals. Therefore, the Customs Act needs to incorporate necessary revisions and amendments to suit the needs of the present times.

CASE STUDY

3.6. Mumbai Port Trust – The Ailing Giant

A mainstay of colonial and post-independence era, Mumbai Port Trust (MbPT) is the oldest port in India, located strategically on the west coast of India with access to western, central and northern harbor lines. The port operates both as owner and service provider with facilities such as cranes, trains, dry-docking and CFS available. Today, MbPT faces challenges in adapting to the changing trends of international trade. The competitiveness of the port is declining, with cargo being diverted towards other ports on the western corridor like Jawaharlal Nehru Port (JNP), Kandla Port Trust (Gujarat) and Mundra Port (Gujarat). This is evident from the marginal year-on-year growth in cargo handled. The port handled 61.66 MMT of



Source: Mumbai Port Trust

Fig. 3.4. Cargo Profile - Mumbai Port Trust (MMT)

cargo in 2014-15, while for 2015-16, the estimated figure is around 64 MMT. This borderline growth in cargo handling metrics can be attributed to a host of challenges faced by the port:

Congestion at the Port Gate

MbPT is located on the Mumbai coastline and is surrounded by a city experiencing substantial vehicular traffic. In such a scenario, truck movement is permitted only after 11 pm. Such a system results in simultaneous movement of a large number of trucks waiting to exit the port, and thus leads to massive congestion at the port gate. This problem is also amplified due to limited parking space for trucks inside the port, resulting in considerable delays in cargo entry and evacuation from the port.

Outdated Infrastructure

At MbPT, two general cargo berths were started in 1914. Since then, no further expansion of general cargo handling capacity has taken place. By 1980, these berths had reached its threshold further from which the increase in traffic could not be handled. In order to enhance the capacity of the port, construction of a third general cargo berth had been planned, which has been stalling since 2003 and will take another 1.5 years to compete construct under the present conditions. Similarly, for handling liquid cargo, the last facility was built in 1983, which was the 4th oil berth at the port. As far as equipment is concerned, the cranes are more than 25 year old, each having a maximum capacity of only 10 tonnes. Such outdated equipment and limitations in the number of berths bar MbPT from handling increased amount of traffic.

Lack of Storage Space

There are very few storage facilities available at the port for stacking containers or storing break-bulk cargo. The Indira dock, Victoria Dock and Prince's Dock collectively have a total storage area of only 400,000 square meters. With such limited storage space, it is difficult to handle 58.18 MMT of cargo every year, given that a major portion of the same remains stored at the port for longer time periods due to limited provision for immediate evacuation. Lack of storage facilities also increases the turnaround time of a vessel (currently 2.8 days), as it leads to a complete stall in the process of cargo unloading from the vessel till there is sufficient space for its storage, or to part-offloading of cargo, thereby leading to considerable delays.

Low Draft and Part-Offloading of Cargo

The maximum draft available at MbPT is 9.5 metres in

the basin and 11 metres at the harbour wall, which is insufficient for handling cargo vessels of higher DWT. As a result, vessels offload cargo at different berths in parts. The assimilation of cargo from different berths is a cumbersome process, adding to the dwell time of cargo and delaying the evacuation process as a whole.

Lack of Mechanisation and Labour Issues

Since 1990, there has been a ban on recruitment of labour at MbPT, in order to facilitate mechanisation of the port. As a result, much of the labour resource handling operations at the port today is aged over 50. Further, the labour force has been reduced from 36,000 in 1990 to approximately 9000 today. Despite such reduction in manpower, there has been no substantial mechanisation of the port, and it lacks adequate number of cranes to handle both general and container cargo. MbPT was the highest container handling port of India during 1960-67, handling as much as 600,000 TEUs per month. Today, due to infrastructural deficiencies such as lack of adequate draft for large container vessels and lack of equipment, container handling at the port has declined to 20,000 TEUs per month. Apart from this, MbPT ceased coal handling at Haji Bunder on January 15, 2016 due to use of excavators and dumpers - which were causing air pollution - for transportation of coal, instead of the mechanised conveyor systems.

Labour Unionism

The Mumbai Port Trust has 1,400 acres of non-custom bound land, which means land not being used nor proposed to be used for port activities. Out of this, 740 acres has been demarcated for leasing. The leasing of this land has met with stern opposition from the labours in the form of strikes lasting for days. The land still lies vacant despite the more flexible land policy guidelines issued by Ministry of Shipping under 'Land Policy Guidelines 2014 for Major Ports'. Further, terming the budget proposal to corporatise major ports as an "enabling provision" to privatise them, port workers unions have threatened to go on an indefinite strike to protest the move.

Scanning in Addition to Physical Inspection by Customs Department

Despite the availability of scanner at MbPT, physical inspection of import cargo is also conducted at the CFS by customs officials. This delays the cargo evacuation process in addition to increasing transaction costs incurred by traders by way of CFS charges.

Due to the above mentioned issues, MbPT has earned the reputation of an 'ailing port'. For revival of the port, several measures are being undertaken by MbPT for generation of revenue, such as the development of a marina, passenger water transport system, construction of a cement terminal (1.25 MMTPA), a bunkering terminal (2 MMTPA) and an anchorage point (7 MMTPA). The port is also investing in tourism activities such as developing a floatel and floating restaurant, and an entertainment zone at Marina Bay. In addition to this, several other measures can be undertaken:

Operation of Port Terminals on PPP Basis

The three liquid terminals of the port are operated by BPCL, HPCL and ONGC on PPP basis. Together, they contribute approximately 60.80 per cent of the total cargo handled at the port. These three terminals work more efficiently than the other terminals of the port taken together. The infrastructure available at the terminals makes it even more efficient, with submarine pipelines to BPCL and HPCL refineries and distribution centres. A similar operational pattern is needed for other terminals to make it much more effective. Most of the public operated general cargo handling terminals at the port is losing cargo volumes due to inadequate mechanisation to handle the cargo. For instance, the Indira Container Terminal, built by Gammon should be given freely to a private operator in order to facilitate the commencement of container operations.

Revival of Bunder Area

The berth and channel at Bunder need to be repaired for efficient handling of bulk cargo. To meet the environmental regulations, a conveyor belt system needs to be put in place to check pollution caused by bulk cargo. The Bunder Area is of considerable economic importance for the port, and revival of the same can potentially make way for substantial revenue generation in the longer term.

CASE STUDY

3.7. Adani Ports and SEZ Limited (APSEZ), Mundra – An Important Private Initiative

Mundra is the biggest and deepest private port in India. It commenced operations in 1998 with only four multipurpose berths, and has shown consistent growth since its inception to reach 21 berths at today's date. It is located at the Gulf of Kutch on the west coast of India, strategically close to most international shipping destinations. The port also has close proximity to the northern and western hinterland of India, which it primarily serves.

The Mundra port has, over the years, adopted unique procedures and functions, which have played a key role in providing competitive advantage in the Indian maritime sector and thus shaping its success. Some of the major advantages developed by the port over the years include:

Dredging

The Mundra port, in 2005, procured in-house dredgers instead of remaining dependent on outside agencies for construction and maintenance activities. They procured three medium sized cutter-suction dredgers, of 20 metre dredging depth, for reclamation of land and making it suitable for port activities. Two medium-cutter suction dredgers were imported from IHC Holland and one from a local shipyard in collaboration with Damen Shipyards, Holland. For construction of the port, these dredgers reclaimed and dredged 44 million cubic metres of sand in the first phase and 80 million cubic metres in the second phase. By investing

in these dredgers, the port also saves substantially on annual cost of maintenance dredging. The current cost of dredging at major ports in India is INR 160-200 per cubic metre, depending on the location of the port, the type of riverbed to be dredged and the distance between the port and the dumping site. Through the usage of captive dredgers, the Mundra port has been able to sufficiently ease its cost pressures.

Automation of Port Procedures

The Mundra Port Trust emphasizes on a 'System-driven Port' approach, wherein the processes and activities are linked electronically through multiple user-based software. This has simplified the trade procedures as well as made handling of port operations efficient. A trader can observe and track the movement of cargo through the availability of a single window facility. The use of such software also makes the administrative procedures more efficient by enabling regular monitoring. The software used by the port are given below:

Mundra Port has made itself efficient in terms of handling everyday operations by streamlining them, and enabling efficient monitoring of all activities in the marine, terminal and evacuation departments. This also reduces the manpower needed at the terminals. For instance, for the transfer of containers from ships to quay, 15 men are required at the Mumbai Port, 21 at Chennai, 12 at Haldia and 4 at JNPT, whereas at Mundra port, only 8 persons are required to handle complete operations of 3,200 ships. As a result, there is no pre-berthing detention for vessels at Mundra whereas semi-mechanisation at major ports increases the turnaround time for a vessel, leaving other vessels in queue waiting for a berth.

S. No.	Software	Uses	Benefits
1	Enterprise Resource Planning (ERP)	All back office operations like finance, costing, materials and inventory management, maintenance, quality, and sales; all other software like APMS, NAVIS and KARTOS are embedded in this software	• Reduction of paperwork • Time and cost efficiency • Single window for all port management activities • Front end interface for customer, such that there is no need for manual visit
2	Adani Port Management System (APMS)	APMS is single window port operation software; it tracks port operations in real time; covers dry bulk, liquid bulk and general cargo operations	• Single window for all terminal operations • Monitoring of vessel movement in real time • Optimization of vessel turnaround time (TAT) and cargo handling
3	NAVIS	A standard terminal operating system for container business	• Easier destination-wise automated stacking of cargo • Time efficiency • Less number of labours required
4	Car Terminal Operating System (KARTOS)	It is used at Adani Automobile Roll–on-roll-off (RORO) Terminal; it manages the process flow of various activities of a RORO Terminal operation	• Streamlining of processes related to vessel operation, yard operation, documentation and yard planning • Optimization of delivery timeline

Effective Use of Land through Sub-Leasing

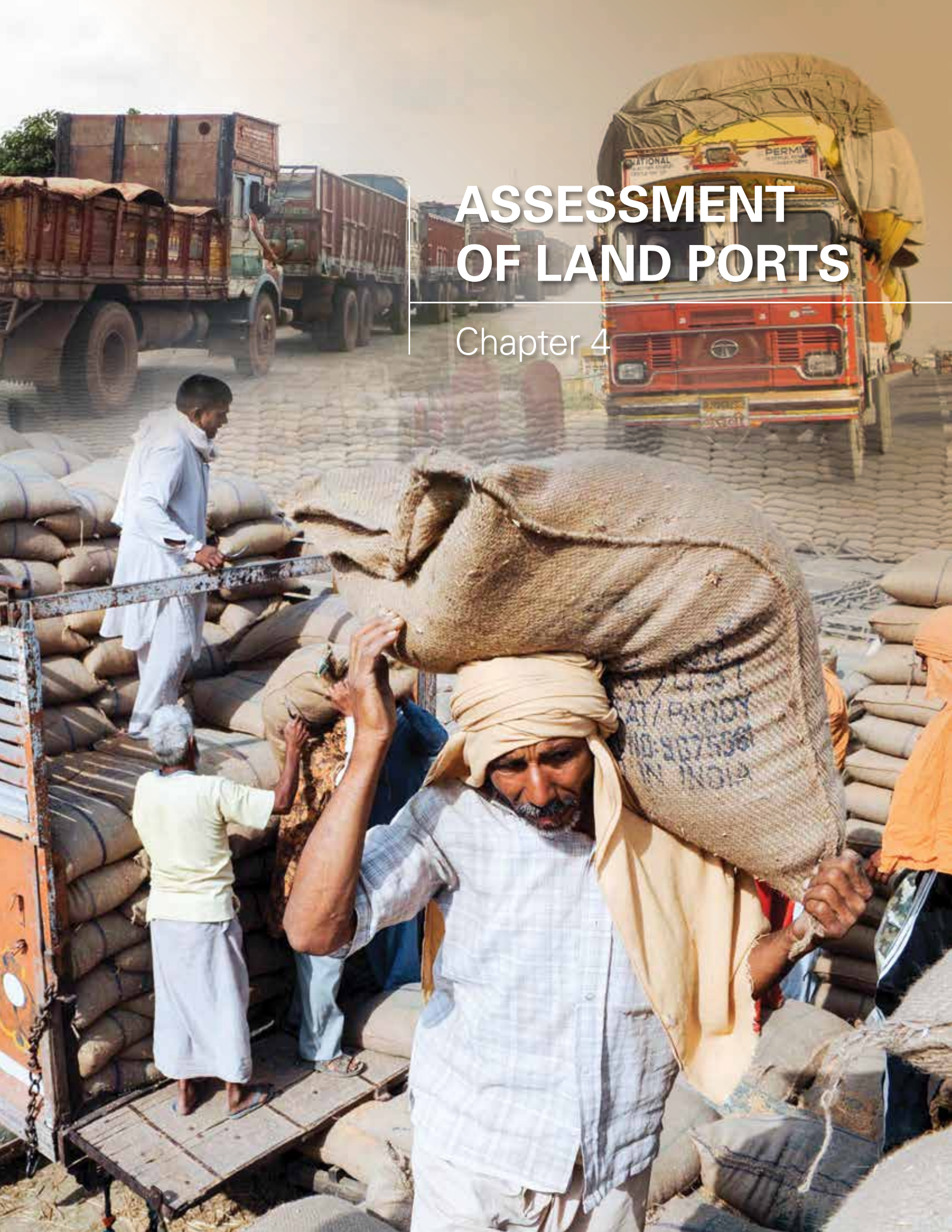
Adequate space for storing, loading and evacuation of cargo is imperative for a port to function effectively. At Mundra, Adani group companies together control a substantial land bank spanning over 30,000 acres. This enables Mundra to offer space to Maruti-Suzuki for its pre-delivery-inspection bays, and also allows companies like Thermax (a major engineering company) to construct huge equipment such as the 600 tonne boiler it recently fabricated (to meet Mundra port's export demands). The port also has adequate space for storage of coal, fertilizers and food grains, in addition to temperature controlled storage facilities.

Bulk Cargo Evacuation Infrastructure

Mundra Port Trust has 16 Mobile Harbour Cranes (Ship to Shore) for handling coal, the last of which was installed in 2011. Out of the mobile cranes, two are used for handling fertilizers, apart from the 4 spare fertilizer grabs installed at the bulk cargo terminal. The West Basin Coal Terminal, the world's largest coal importing terminal, has a conveyor system stretching 21 kilometres, with 7.5 metre/second conveying speed, to transport coal to nearby establishments such as Coastal Gujarat Power Limited (CGPL) and Adani Power Limited (APL). The terminal also is a major supplier to the northern hinterland of India, apart from serving other parts of the country as well. For evacuation through rail, rapid wagon loading system with 2 rail lines and having a daily capacity to load 88,000 tonnes, has been installed at the port. Mundra Port Trust also has a mechanised truck loading system, consisting of 3 silos and having a daily capacity to load 12,000 tonnes. Further, four lane roads, with navigational guidance through various signboards and landmarks at appropriate points, are present at the port along with a four lane (1.5 kilometre long) dedicated Rail Over Bridge (ROB) for smooth movement of trucks within and out of the port, thus, making the port immune to congestion.

Cargo Specific Terminals

At the major ports of India, while cargo-specific berths are there, cargo-specific terminal (for containers) is only found at JNPT. At the Mundra port, the focus was on developing cargo-specific terminals with specific facilities in place. For instance, the West Basin Terminal handles coal, and has developed coal-specific infrastructure including a 21 kilometre conveyor system, rapid wagon loading system, etc. Similarly, the South Basin Terminal, which is a container handling terminal, is equipped with container-specific infrastructure.



ASSESSMENT OF LAND PORTS

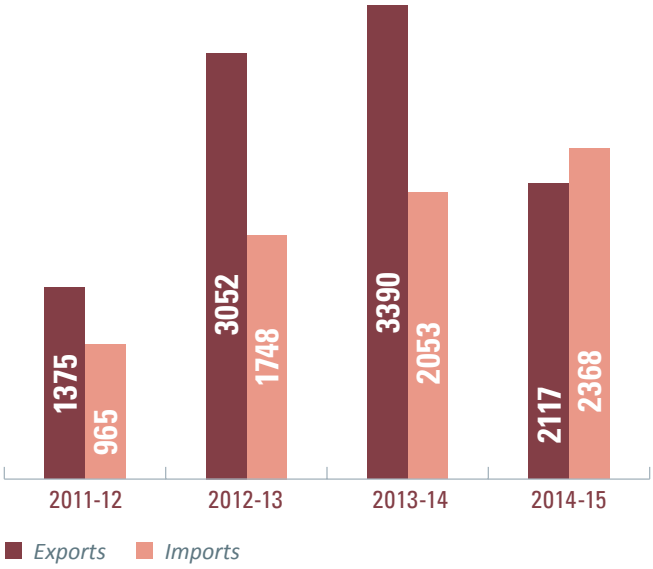
Chapter 4

ATTARI INTEGRATED CHECK POST (ICP)

Attari Integrated Check Post,

functional since 2012, is the first ICP of India. The introduction of this ICP has enabled the movement of around 250 trucks a day through the India-Pakistan border, and therefore, has been a major development towards facilitating bilateral trade between the two countries. The ICP is spread over an area of approximately 130 acres. Infrastructure at the ICP includes a dedicated cargo terminal building covering an area of 4700 square metres, an import warehouse (covering 7400 square metres), an export warehouse (covering 3400 square metres) and a parking area for trucks (covering 55000 square metres). It also provides one-stop integrated facilities such as quarantine, isolation rooms, fumigation centres, weighbridges, public address systems and dormitories.

Year-on-Year Traffic



Trade through Attari ICP (in INR Crore)

Cargo Profile

Exports	Imports
Fresh Fruits and Vegetables	Cement
Biscuits	Gypsum
Soya meal cake	Dry fruits
Fresh meat	Hydrogen Peroxide

Commodities Traded through Attari-Wagah ICP

Truck Traffic

NUMBER OF TRUCKS YEAR-WISE

	Import	Export
2011-2012	19087	31897
2012-2013	33599	41248
2013-2014	39365	46039
2014-2015	46653	33037

Volume of Trade

	2011-12	2012-13	2013-14	2014-15
Value (INR Cr)	1375	3052	3390	2117
Value (INR Cr.)	965	1784	2053	2368
Total Value (INR Cr.)	2340	4800	5443	4485

Traffic and Trade Volume at Attari ICP

4.1. Attari Integrated Check Post (ICP)

4.1.1. Challenges

Major Issues Faced	
Dearth of Equipment and Facilities	• Lack of cargo handling equipment leading to delays and underutilisation of storage space • Strong labour union resistance - a hindrance towards mechanisation • Need for adequate monitoring equipment such as CCTV cameras, security lights, x-ray scanners and full body truck scanners • Lack of testing facilities
Issues Related to Warehousing	• Waterlogging at the open storage area; urgent need for cementing • Need for cementing in the open storage area • Lack of drainage facilities • High risk of contamination of cargo • Need for separate area for hazardous cargo
Lack of Coordination between Governing Bodies	• Absence of LPAI representatives at the ICP • Communication gap between various authorities governing the Attari ICP • Different governing authorities falling under different ministries, leading to incoherence • Delays in implementation of key projects • Lack of streamlined SOP leading to ambiguities
Workforce Related Issues	• Reduction in working hours leading to congestion and delays • Adverse effects on perishable cargo due to delays • Labour charges levied irrespective of actual use of labour - considered an adverse effect of the presence of the labour union
Limitations in Truck Movement	• Export trucks not allowed to load import cargo from the Attari warehouse while exiting the ICP on the same day • Increased trade costs and reduced productivity suffered as a result of such limitations
Unreasonable Demurrage	• No free days prior to application of demurrage • Demurrage levied on a daily basis instead of hourly basis, leading to frequent instances of inflated costs for traders • Demurrage charges not standardised across ports in India

The integrated check post (ICP) at Attari was inaugurated in April 2012 with a view to facilitate a surge in trade activities between India and Pakistan. It was foreseen that the development would ensure a tenfold increase in trade between the two countries through the land border route. However, over the years, certain key issues have continued to plague the ICP, thereby affecting the growth potential of trade through the Attari-Wagah land route. Dearth of adequate cargo handling and monitoring equipment, lack of testing facilities, issues related to storage areas, labour concerns, ambiguities over truck movement, inflated demurrage payments by traders and lack of coordination between governing authorities have been some of the problems observed at the Attari ICP, which have been discussed in detail in this section.

Dearth of Equipment and Facilities

Cargo Handling Equipment

One of the major issues visible at the Attari ICP was the lack of cargo handling equipment, leading to underutilisation of storage space at the warehouses.

One of the major commodities imported through the Attari-Wagah route is cement. Each cement-carrying truck arrives at the ICP hauling approximately 800 bags. Currently, unloading and stacking these bags

at the warehouse is completely a labour intensive process, entailing reduced utilisation of available space in addition to overall delays. Ideally, stacking of cargo at the warehouse can happen up to a height of 30 metres. However, due to manual handling of cargo, it becomes difficult to stack beyond 12 metres, and this restriction leads to sufficient underutilisation of available space at the warehouse. According to traders, only around 40 percent of the actual warehouse capacity is currently being utilized as a result of the manual stacking procedures followed.

Mechanisation in this area, such as installation of more conveyer belts (currently only one is in place) and cranes for lifting large cement bags, will significantly bring down the long hours required for the process. However, installation of new technology is a sensitive issue at the Attari ICP due to the high levels of resistance faced from the labour union.

Monitoring Equipment

At the Attari ICP, checking and monitoring of cargo is also done manually, and introduction of the following equipment is imperative to achieve desired operational standards in the aforementioned areas:

- CCTV Cameras and Security Lights: There is a need for more CCTV cameras at the Attari ICP, especially at the warehouses. There have been instances of pilferage arising from manual handling of cargo, monopoly of the labour union and inefficient monitoring facilities at the Attari ICP. The chances of pilferage are maximum during the winter, owing to heavy fog in the winter months. Installation of efficient CCTV cameras in adequate numbers will go a long way in protecting cargo from pilferage. The ICP also needs more efficient security lights for strengthening surveillance against unscrupulous activities during the night.
- X-Ray Scanners: The Attari ICP needs more x-ray scanners at the godowns. As of now, only one godown has an installed x-ray scanner, which is inadequate for checking cargo from approximately 250 trucks (containing around 800 bags each) that the ICP caters to in a day. Random customs checking of cargo at the godown happens manually. Introduction of x-ray scanners will make the process faster, efficient and more secure.
- Full Body Truck Scanners: As per the traders, the installation of full-body truck scanners at the Attari ICP is an absolute necessity to ensure foolproof security of goods as well as prevention of unethical practices and illicit trade. The Land Ports Authority of India Act, 2010, mandates the installation of scanners at the posts through which international trade takes place. However, despite considerable demands from the business community and the customs department, development toward this end has remained pending since the ICP became operational in 2012. As a result, only around 5-10 per cent of the cargo can currently be randomly checked, owing to the difficulties associated with examining laden trucks without unloading the cargo. In order to address this security issue, there is an urgent need for interventions by the Land Port Authority of India (LPAI) to escalate the process of installation of scanners, by notifying Electronics Corporation of India Ltd. (ECIL) as well as ensuring fast execution of the project in a time-bound manner.

Testing Facilities

Lack of testing facilities at the Attari ICP also sufficiently delays the release of cargo which require testing. While most products come with an acceptable certification by the Pakistan National Accreditation Council (PNAC), the others wait for considerable time periods till the arrival of requisite reports from the testing labs. Therefore, presence of a testing facility would facilitate faster clearance of goods from the Attari ICP.

Issues Related to Warehousing

Issues with Open Storage Area

Loose bulk cargo constitutes close to 60 per cent of the total cargo handled at the Attari ICP. It is stored in an open yard near the trade gate (as depicted). However, this is a low lying area prone to waterlogging. Lack of drainage facilities further aggravates the issue. Impurities get mixed with the cargo unloaded at the storage yard, thereby adversely affecting the quality of cargo. The ground in this area is also loosely bound and therefore needs cementing.

S. No.	Name of Goods
1	Cement
2	Gypsum
3	Dry Fruits
4	Hydrogen Peroxide

Table 4.1. Top Four Imports through Attari ICP (2014-15)

Currently, there is no separate SOP in place for hazardous goods. Therefore, trucks containing harmful chemicals like hydrogen peroxide, which is one of the top four imports through Attari ICP, are parked along with the other trucks.

There is a need for trucks carrying hazardous chemicals to be parked and handled in an isolated area to prevent possible perils which can potentially cause considerable damage. For instance, in 2014, an Indian tanker exploded soon after hydrogen peroxide, which is an inflammable chemical, was transferred from a Pakistani tanker at the Attari ICP on the Indo-Pak border, sparking panic in the high-security area.

Handling inflammable and other hazardous cargo has to be in specialised areas and should involve specific procedures. However, no measure has been taken towards this end till date, and there needs to be a focused approach towards addressing this issue in the near term.

Lack of Coordination between Governing Bodies

Issues related to lack of coordination and communication between various authorities governing the Attari ICP have been evident at the port. For instance, the absence of LPAI representation at the Attari ICP creates a communication gap between the port authorities and the LPAI (located in Delhi), leading to delays in implementation of projects. In such a scenario, the redressal of key issues facing the ICT, such as the lack of necessary equipment, becomes difficult.

Authority	Ministry	Role	Status
LPAI	Ministry of Home Affairs	To oversee and regulate the construction, management and maintenance of the ICPs	Not present
CWC	Ministry of Agriculture, Food, Consumer Affairs	To provide logistics support to the agricultural sector in the form of food grain warehouses, industrial warehousing, customs bonded warehouses, container freight stations, inland clearance depots and air-cargo complexes	Present (one official)
CBEC	Ministry of Finance	Formulation of policy concerning levying and collection of customs and central excise duties, prevention of smuggling, and administration of matters relating to customs, central excise and narcotics to the extent under the CBEC's purview	Present (two officials)
BSF	Ministry of Home Affairs	To guard India's land border during peacetime and preventing transnational crime.	Present

Table 4.2. Different Governing Authorities at the Attari ICP

Further, as different governing authorities fall under different ministries (represented in Table 4.2), the problem of incoherence between them arises. For example, while the customs department comes under the Ministry of Finance, LPAI is under the Ministry of Home Affairs. As a result, the varied directives issued by the different authorities often lack coherence. The issue is further aggravated by the lack of streamlined standard operating procedures (SOP), which leads to ambiguities due to one authority being non-conversant with the directives issued by another.

Workforce Related Issues

Reduction in Working Hours

Till the early part of 2015, the working schedule followed at the Attari ICP comprised of 12 hours i.e. 7 am-7 pm. However, the working cycle was revised to 7 am - 5 pm, and this reduction of two hours has adversely affected overall procedures. It has given rise to the impediment of long queues outside the Attari ICP complex, some extending as long as 2 kilometres in the peak season (September–January). Apart from the congestion caused, the long delays have particularly had detrimental effects on perishable goods, making the process of movement of such goods through the Attari-Wagah route cumbersome.

Ambiguities over Labour Charges

At the Attari ICP, labour charges are reportedly levied on traders irrespective of actual use of labour. For example, an export truck does not require any labour involvement as there is no necessity for loading and unloading of cargo. Further, loose bulk cargo is handled by tipper trucks, which automatically unload the cargo into the open yard. However, the bill generated by the Central Warehousing Corporation (CWC) entails the payment of labour charges in spite of no labour being involved. The traders have to shell out labour charges to the tune of INR 2,000 per truck or INR 140 per tonne irrespective of the use of labour, which boils down to sufficient cost pressures for them.

Currently, there are approximately 1,400 labourers at the Attari ICP, and the unreasonable labour charges imposed are considered, by the traders, as an adverse effect of the presence of a strong labour union.

Limitations in Truck Movement

At the Attari ICP, movement i.e. entry/exit of trucks laden with cargo is allowed only once a day. Therefore, if an export truck enters Attari with goods, it has to leave the Attari ICP without any cargo, in case it is returning on the same day. Export trucks are not allowed to load import cargo from the Attari warehouse while exiting the ICP on the day of entry. For leaving the ICP with import cargo, such trucks have to wait for 24 hours, leading to additional costs in the form of parking charges.

In case of trucks leaving the Attari ICP without cargo on their way back on the same day, productivity suffers. On the other hand, for trucks waiting for 24 hours to carry import cargo, the idle time increases in addition to inflating trading costs.

Unreasonable Demurrage

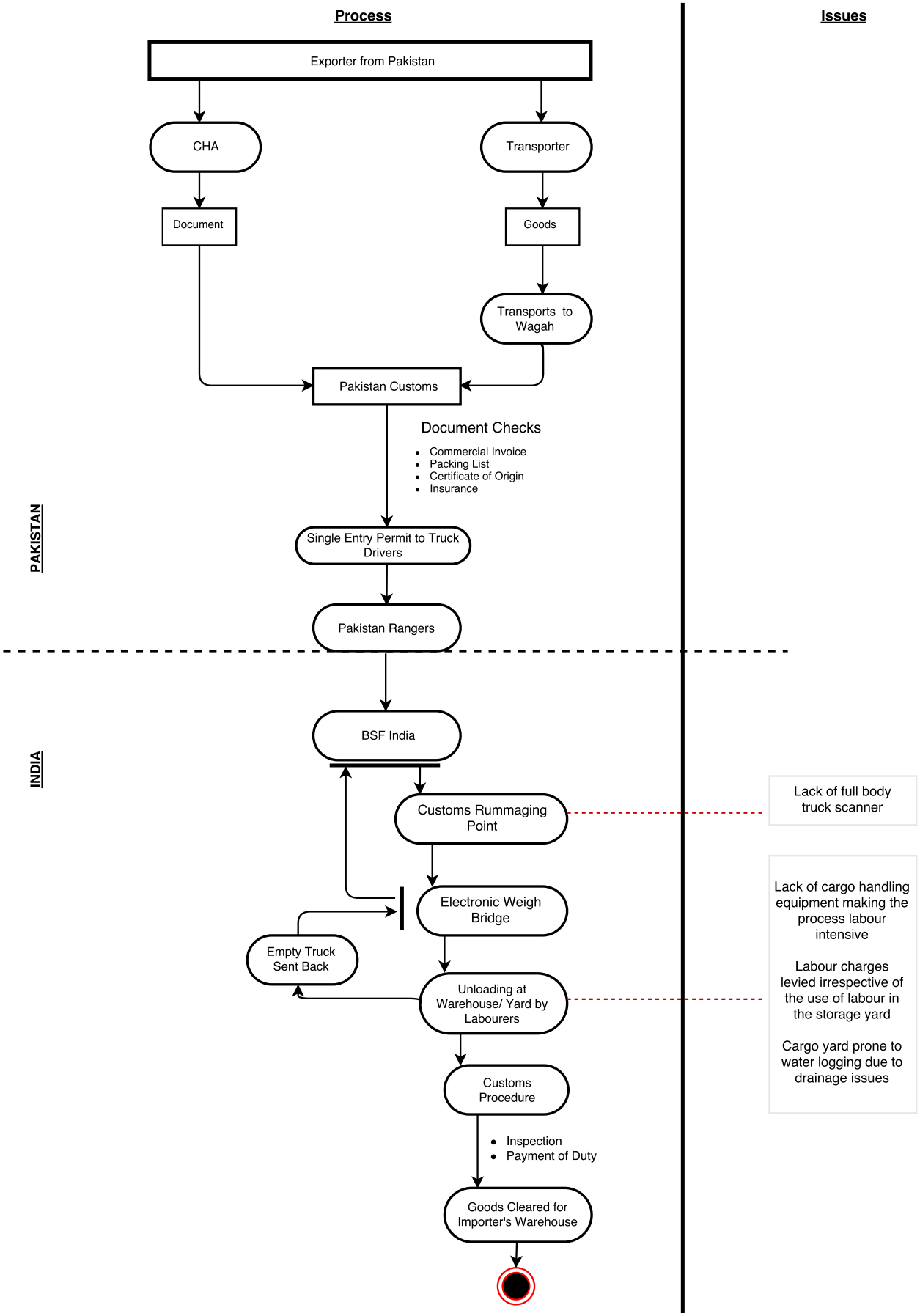
Trucks are provided a window of 72 hours before demurrage charges are applied in case of delays in unloading of bulk cargo at trade ports across the country. However, at the Attari ICP, they start applying from the moment a truck enters India. The demurrage charges range between INR 2,000 - 2,200 per truck and are levied on a daily basis instead of an hourly basis, which leads to unnecessarily inflated costs as per the traders. The traders, even though the goods are inside the warehouse for only a few hours, are charged for a full day under the current system. In case of goods arriving in the evening, often such a situation arises wherein the trader ends up paying charges for 2 days.

Port	Demurrage (INR)	Unit
Attari ICP	2000	Per truck
JNP	42.50	Per square metre per week

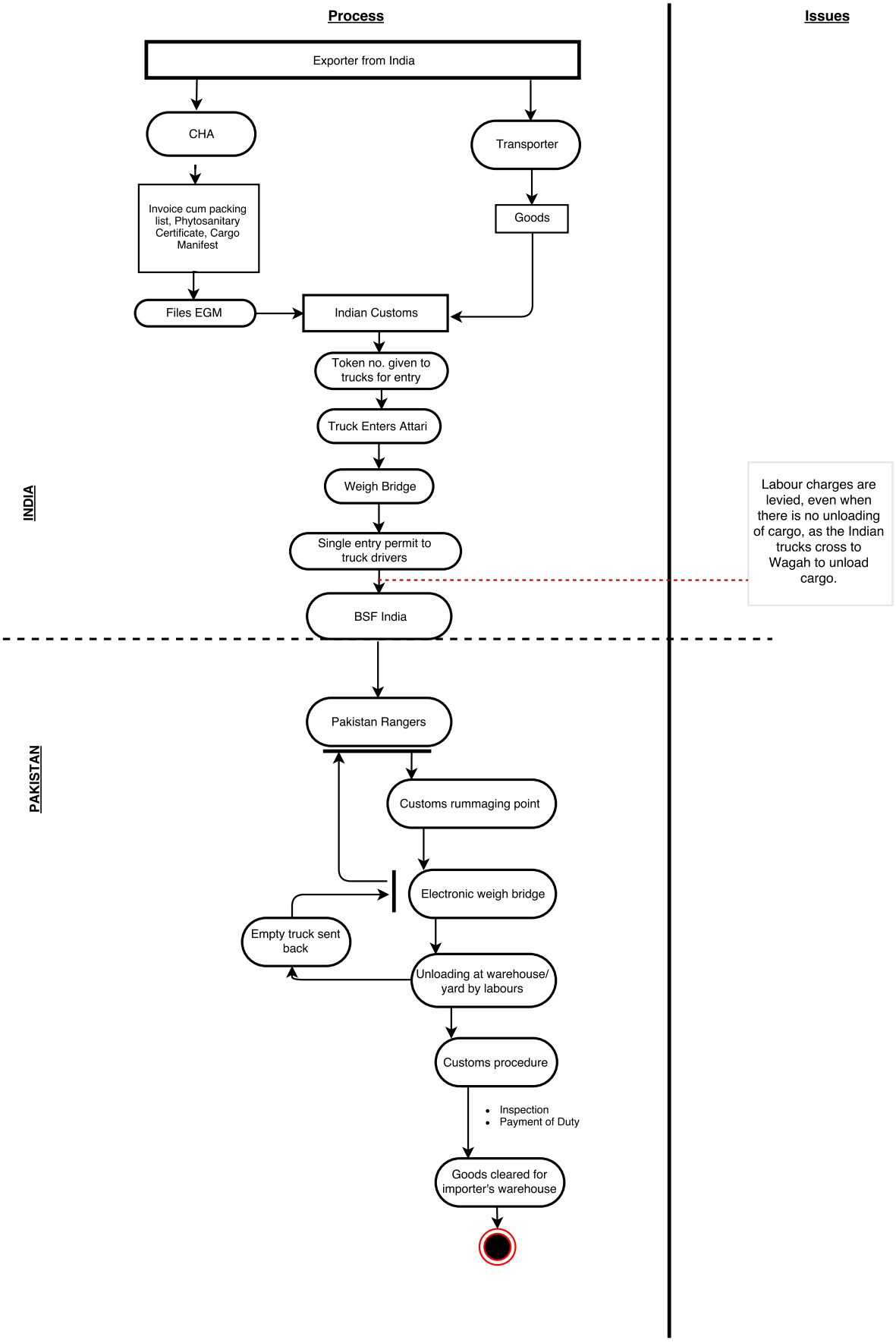
Table 4.3. Variations in Charges and Units for Land (Attari ICP) and Sea (JNP) Ports

Also, the demurrage charges are not standardised across all ports in India. They are different for land and sea ports, as depicted ain table 4.3.

Movement of Cargo at Attari ICP – Import



Movement of Cargo at Attari ICP - Export



4.1.2. Plan of Action

Recommendations and Indicative Plan of Action	
Measures for Infrastructural Modernization	• Resolving the issue of water logging at the open storage area • Prevention of contamination of cargo • Using water pumps and rain water harvesting as interim solutions • Concretisation of the storage yard and creation of an efficient drainage system in the l onger term • Improvements in the condition of warehouses • Installation of necessary equipment and systems, such as cranes, x-ray machines, full body truck scanners, better CCTV cameras, EDI, etc. • Speeding up the procedure of building railway infrastructure
Increased Representation of Governing Authorities at the Attari ICP	• Reduction in communication gap between the central and the local authorities • Presence of LPAI representative at the Attari ICP • Adequate representation from all governing bodies for streamlined decision making and optimum grievance redressal
Procedural Reforms	• Introduction of a comprehensive transport agreement between India and Pakistan to ensure smooth movement of trucks • Provision for export trucks going to Wagah to return laden with import cargo • Facilitation for entry of trucks bringing goods from Afghanistan with the aim of bringing down logistics costs • Standardisation of daily trade timings to 12 hours for both the countries • Reductions in costs and unwarranted losses due to damages to goods
Removal of Ambiguities over Demurrage	• Provision for free days • Standardisation of demurrage charges across ports in India • Calculation of demurrage on an hourly basis

Measures for Infrastructural Modernization

Reconditioning of the Storage Spaces

It is imperative to resolve the issue of water logging and put adequate drainage systems in place at the open storage yard to prevent contamination of cargo. As an interim solution, water pumps need to be installed and a rain water harvesting system needs to be put in place to address the issue. In the longer term, the yard needs to be concretised and an efficient drainage system needs to be put in place, to prevent water logging and cater to the large amount of bulk cargo handled by the Attari ICP. Further, the warehouse is also in a poor condition and constant attention needs to be given towards maintenance of the same.

Installation of Necessary Equipment and Systems

Mechanisation is an imperative cog in the redressal of some of the major development issues at the Attari ICP. The Attari ICP needs introduction and upgradation of certain key equipment to increase operational efficiencies, reduce damages to cargo, prevent pilferage and maintain the desired safety standards. Prompt installation of equipment such as cranes, x-ray machines, and full body truck scanners is an immediate necessity at the Attari ICP. Over the years, frequent labour unrest supported by the labour union has continued to be one of the prime reasons behind such upgradation getting stalled or delayed. These hindrances can be curbed with interventions from the LPAI and the state authorities. The Attari ICP also needs to further strengthen its security infrastructure through the installation of better CCTV cameras and security lights to avoid unwarranted activities such as pilferage. The EDI system needs to be made operational at the Attari ICP as well to ensure seamless information sharing and paperless procedures.

Development of Railways

The Attari ICP currently deals in bulk cargo, and railways are the more proficient and cost-effective means of transportation for the same. The Attari ICP needs to deliberate on complementing the existing transportation system, based on trucks, with the development of an efficient railway system for transporting cargo. For the purpose, a railway siding needs to be created inside the Attari ICP. Although an area of 25 yards has been demarcated for this purpose, no work has been initiated towards accomplishing the same. There is an immediate need to provide necessary fillip to the process for streamlining cargo movement through the Attari ICP.

Increased Representation of Governing Authorities at the Attari ICP

There is currently no LPAI representative at the Attari ICP. The ensuing gap in communication between the central and the local authorities has left a considerable share of the infrastructural issues, faced at Attari, unaddressed. Dearth of necessary communication in key issues such as the introduction of truck scanners, weigh-bridges and x-ray scanners in godowns have translated to unnecessary delays, thereby affecting overall trade through the ICP. The Attari ICP also suffers from the lack of a strong grievance redressal mechanism, which adds to the woes of the traders. Therefore, to plug the aforementioned deficiencies and address the issue of lack of Standard Operating Procedures (SOP) between different authorities, the presence of adequate number of representatives from concerned authorities such as LPAI, CWC, CBEC and BSF at the Attari ICP is imperative.

Procedural Reforms

Introduction of Transport Agreement for Movement of Trucks

A comprehensive transport agreement between India and Pakistan is needed to ensure smooth movement of trucks between the two countries, as well as to address certain prevailing operational issues.

For instance, under the current system, an export truck going to Wagah comes back empty and vice-versa. The proposed transport agreement needs to lay down necessary provisions facilitating the return of these trucks to India with imported goods. Such a development will provide fillip to overall trade through the Attari ICP.

Further, the transport agreement can act as a facilitator to bring goods from Afghanistan into India. There is no legal provision for the entry of Afghan trucks through the Attari ICP. Therefore, goods from Afghanistan get transloaded to Pakistani trucks before they can enter India. The proposed agreement can streamline the process, which in turn would go a long way in bringing down logistics cost for the traders. Such costs are passed on to the end users, which ultimately hampers the competitiveness of the products in the long run.

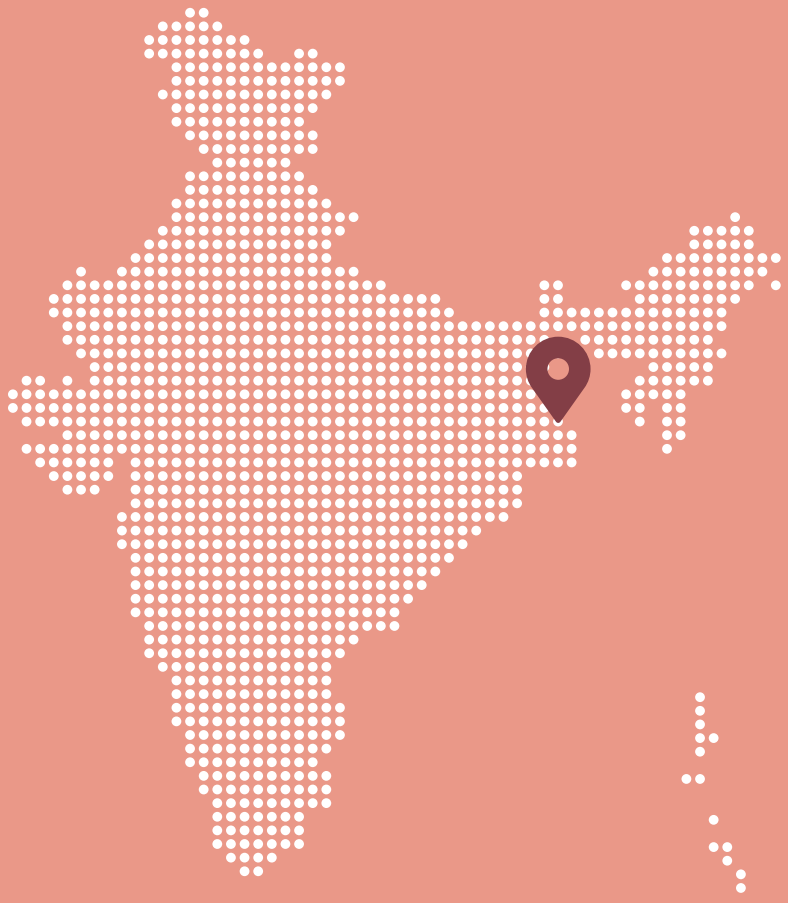
Increase in Trade Timings

For increasing cargo traffic, and thereby bolstering trade flow between India and Pakistan, it is crucial to standardize daily trade timings to 12 hours for both the countries. Diminished trade timings result in, apart from congestion and delays, increased chances of damage to goods. These impediments, when factored in, culminate to inflated costs and unwarranted losses for the traders. Standardisation of trade timings can ease business procedures for the traders, leading to increased trade.

Removal of Ambiguities over Demurrage

In order to reduce cost pressure on the traders, the provision for allowance of free days before demurrage is levied can be considered. Further, the Customs needs to deliberate on standardisation of demurrage charges, and send related notifications to the traders and CHAs, which can potentially go on to remove ambiguities and improve the competitiveness of the Attari ICP. Finally, the basis of levying demurrage needs to be on an hourly basis instead of the current practice of considering calendar days. This will sufficiently ease cost pressure for trucks held up at the ICP for less than 24 hours; currently, charges are paid for an entire day and often for 2 days in case of goods arriving in the evening.

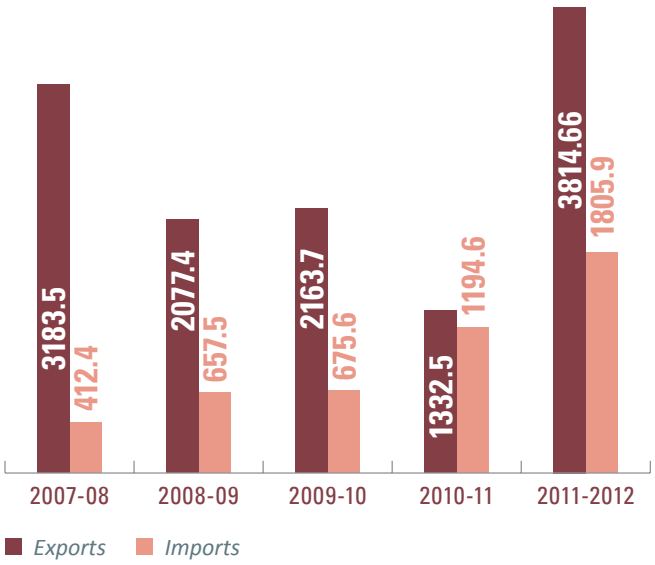
PETRAPOLE LAND CUSTOMS STATION (LCS)



Petrapole Land Customs Station

is one of the 38 land border crossings between India and Bangladesh and accounts for more than 65 per cent of India-Bangladesh bilateral trade. Petrapole is the Indian side of the Petrapole-Benapole border checkpoint between India and Bangladesh near Bongaon in North 24 Parganas district of West Bengal. It is the largest land customs station in Asia. The Benapole/Petrapole route carries the heaviest traffic by road, accounting for around 80 per cent by value and 50 per cent by volume of India's exports to Bangladesh.

Year-on-Year Traffic



Trade through Petrapole LCS (in INR Crore)

Cargo Profile

Indian Import	Indian Export
Jute Products	Cotton Fabric
Betel Nuts	Raw Cotton
Fish	Chemical Dyes
Cotton Rags	Synthetic Fibres
Cleaning Cloth	Two and Four Wheelers
Knitted Fabric	Machinery/Parts
Re-processed Plastic Agglomerate	Cereals

Commodities Traded through Petrapole-Benapole LCS

Truck Traffic

DAILY NUMBER OF TRUCKS

	Import	Export
2004-2005	327	73
2009-2010	658	147
2014-2015	1060	296

Revenue Collected by Customs

	Import Duty (INR Crore)	Export Duty (INR Crore)	Total (INR Crore)	Percentage Change from Previous Year
2009-10	4034.13	-	4037.31	-
2010-11	8683.29	820.81	9505.15	135%
2011-12	14375.72	27.01	14404.91	51.55%
2012-13	34234.70	3.50	0.21	138.34%
2013-14	27080.37	8.65	27090.70	-21.09%

Commodities Traded through Petrapole-Benapole LCS

4.2. Petrapole Land Customs Station

4.2.1. Challenges

Major Issues Faced	
Issues Related to Logistics	• Provision for 250 trucks at the CWC parking vis-à-vis per day traffic of around 450 trucks • Illegal parking facilities in the vicinity of the port • Occurrence of transloading activities which are not government approved at the illegal parking areas • The prevailing system of parking translating to delays and inflated costs, principally by way of substantial truck detention charges paid • Regular congestion on the approach roads to Petrapole i.e. NH-34 and NH-35, which are sufficiently narrow owing to unplanned coverage of trees and existence of human settlements on both sides • Absence of adequate monitoring facilities at the CWC parking area leading to increased chances of pilferage and burglary
Issues in Transloading	• The process of loading and unloading of cargo is manual, leading to congestion and delays • Inadequate number of sheds at CWC increasing the risk of damage to cargo
Frequent Failure of EDI System	• The EDI system is prone to link failure, leading to cumbersome manual documentation procedures • Old and outdated EDI related equipment i.e. printers, LAN, etc. • Inadequate staff strength at the service centre, leading to delays
Lack of Testing Labs	• Time consuming testing procedures due to the testing facilities being located at considerable distances • The issue further accentuated by the requirement of hard copies of reports by the customs authorities • Long delays entailing high risks, especially in the case of perishable goods
Regulatory Issues	• Frequent delays faced in generation of EP Copy by the preventive officers post customs clearance • Inadequate working hours as well as incoherence in holidays (Friday for Bangladesh and Sunday for India) adding to operational delays and increased congestion

The infrastructural and operational challenges faced at the Petrapole Land Customs Station (LCS) revolve around issues related to logistics, the EDI system and lack of facilities such as testing labs. Operational impediments related to transloading, incoherence of working hours, etc. are also evident at the LCS. Regulatory issues related to delayed generation of Export Promotion (EP) Copy by preventive officers and inadequacies in working hours are notable at Petrapole. These challenges have been discussed in detail in the following paragraphs.

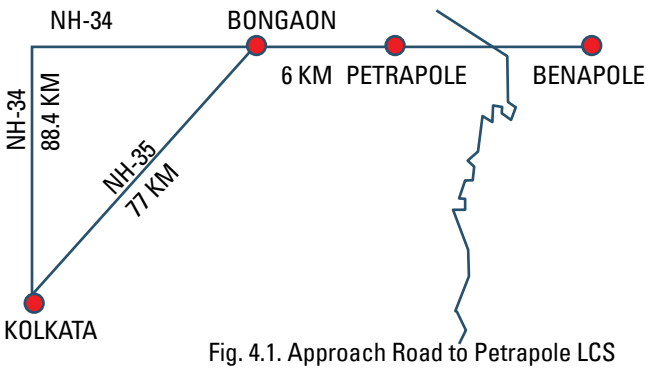


Fig. 4.1. Approach Road to Petrapole LCS

Issues Related to Logistics

Inadequate Parking Space at CWC vis-à-vis Traffic

The current provision at the CWC parking is for approximately 250 trucks, which is inadequate given the traffic per day is around 450 trucks. This lack of parking space has given rise to illegal parking

facilities in the vicinity of the land port. An export truck headed towards Petrapole LCS is first parked at an illicit parking area in Bongaon, where transloading of cargo into local trucks takes place; which then head to Petrapole for export procedures to complete. Such transloading activities are not government approved. Apart from considerably delaying cargo movement, this system entails tremendous cost pressure for traders as the detention charges amount to INR 1,000-2,000 per truck per day.

Parking	Process	Average Cost (INR)*
Kalitala Parking	Entry of Truck	800
	Truck Detention Charges	1000-2000

**Per Truck Per Day Charges*

Table 4.4. Key Cost Components – Logistics at Petrapole LCS

Narrow Approach Road

The problem of illegal parking is further accentuated by regular congestion on the approach road to Petrapole. The two highways that lead to Petrapole, i.e. NH-34 and NH-35 are very narrow, lined with heavy coverage of trees as well as considerable human settlement on both sides of the roadway. This leads to heavy congestion in these routes, causing delays in the movement of trucks to Petrapole. Further, given the considerable increase in vehicular movement projected for these roadways in the future, decongestion measures would be highly necessary to facilitate trade.

Absence of Monitoring Facilities at CWC Parking Area

Instances of unscrupulous activities at the CWC parking area, such as attempts of pilferage and burglary, have been continually indicated by the stakeholders as an area of concern. Traders and CHAs display considerable apprehension in using CWC warehouses because of security concerns. The absence of adequate monitoring facilities at the CWC parking area in Petrapole has been at the heart of frequent occurrences of unwarranted activities, and introduction of the same is imperative for discouraging such malpractices, and thereby effecting streamlined trade activities through Petrapole.

Issues in Transloading

Indian laws do not permit Bangladeshi trucks to enter Indian Territory and carry cargo to the importers' warehouses, while there are no such restrictions for Indian trucks entering Bangladesh. Thus, the cargo from Bangladeshi trucks needs to be transloaded to Indian trucks which carry the same to the importers. The impediments associated with this procedure are discussed below.

Involvement of Manual Labour

The process of loading and unloading of cargo is manual and is carried out by labourers working on a daily-wage basis. Manual transloading of cargo not only makes the process cumbersome, but also results in substantial delays in movement and thereby heavy congestion at the import yard.

Inadequate Number of Sheds at CWC

Petrapole is a region prone to heavy rainfall throughout the year. Consequently, lack of adequate number of sheds for transloading substantially adds to the operational woes at the CWC.

S. No.	Commodities	HS Code	Value (Million USD)
1	Other nuts, fresh or dried, whether or not shelled or peeled	0802	8.40
2	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear)	6203	5.68
3	Yarn of jute, or of other textile bass fibres	5303, 5307	5.53
4	Sacks and bags, of a kind used for packing of goods	6305	4.44

Source: www.Zauba.com

Table 4.5. Top Imports at Petrapole LCS (2014-15)

Transloading takes place for approximately 200-300 trucks per day, and the dearth of sheds for catering to this traffic creates hassles and makes it difficult to protect cargo from damages. For instance, a

considerable share of the goods imported through Bangladesh are perishable products (including edible items), which run the risk of getting damaged during rains, entailing substantial losses for the traders.

Frequent Failure of EDI System

The customs documentation process at Petrapole LCS has been made electronic through the introduction of the EDI system. Further, for those who do not have access to a Remote EDI (RES) system, a service centre is available for dispersal of all the required information.

However, the EDI system is constantly prone to link failure, the frequency being as high as 12 times a month. This impediment leads to manual documentation and renders the procedure cumbersome and time-consuming.

Secondly, many CHAs complained about the EDI-related equipment (such as printers and the LAN) being old and outdated, which mostly remain out of order. Despite the introduction of an additional network for EDI connectivity (earlier only BSNL existed), the problem continues to persist.

Finally, inadequacies in staff strength at the service centre lead to long queues, causing substantial procedural delays.

Lack of Testing Labs

For product testing, samples are sent to Kolkata, and for certain categories of products, there is a provision for testing in private laboratories such as SGS. The process of testing takes as long as 3 days owing to the considerable distances these testing facilities are located at, further accentuated by the requirement of hard copies of reports by the customs authorities. As a result, trucks have to wait for 4-7 days for clearance procedures to complete.

Such long delays have adverse effects, especially in the case of perishable goods, as there is a dearth of storage facilities for such products. For instance, for perishable items such as fish feed, there is a provision for concessional duty corresponding to nutritional aspects such as vitamin content. Therefore, owing to substantial delays and lack of requisite storage infrastructure, such products run considerable risk of going stale, thereby entailing cost pressures and adverse effects on profitability for the traders.

Regulatory Issues

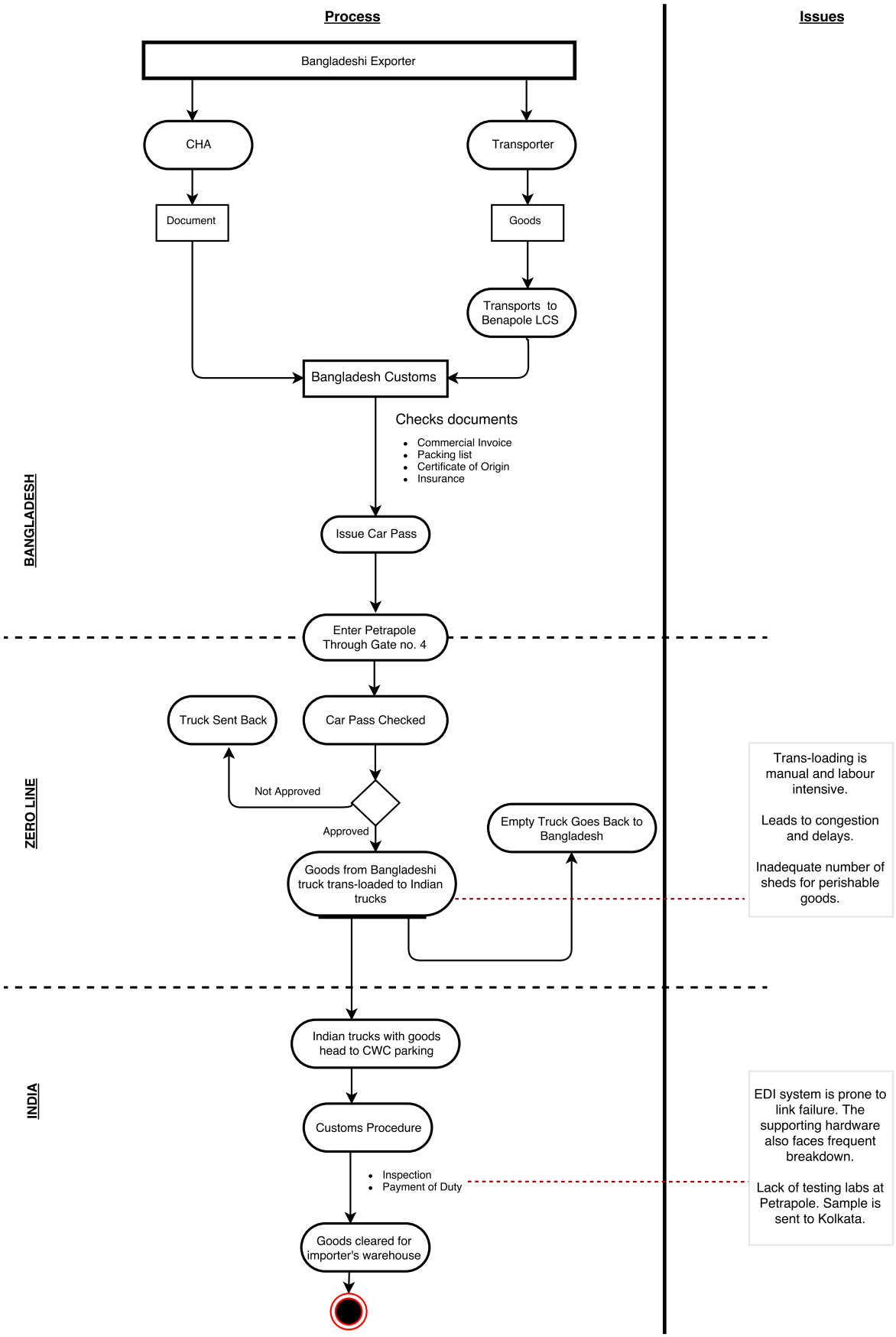
Delays in Issue of Export Promotion Copy (EP Copy)

For export cargo, sufficient delays are faced in terms of generation of the EP Copy by the preventive officers post customs clearance as indicated by a considerable number of CHAs at the land port. Around 150-200 Bills of Export are cleared per day, but in contrast only 50-60 EP copies are issued by the preventive officers, which is regarded by the CHAs as non-cooperation adding to overall delays.

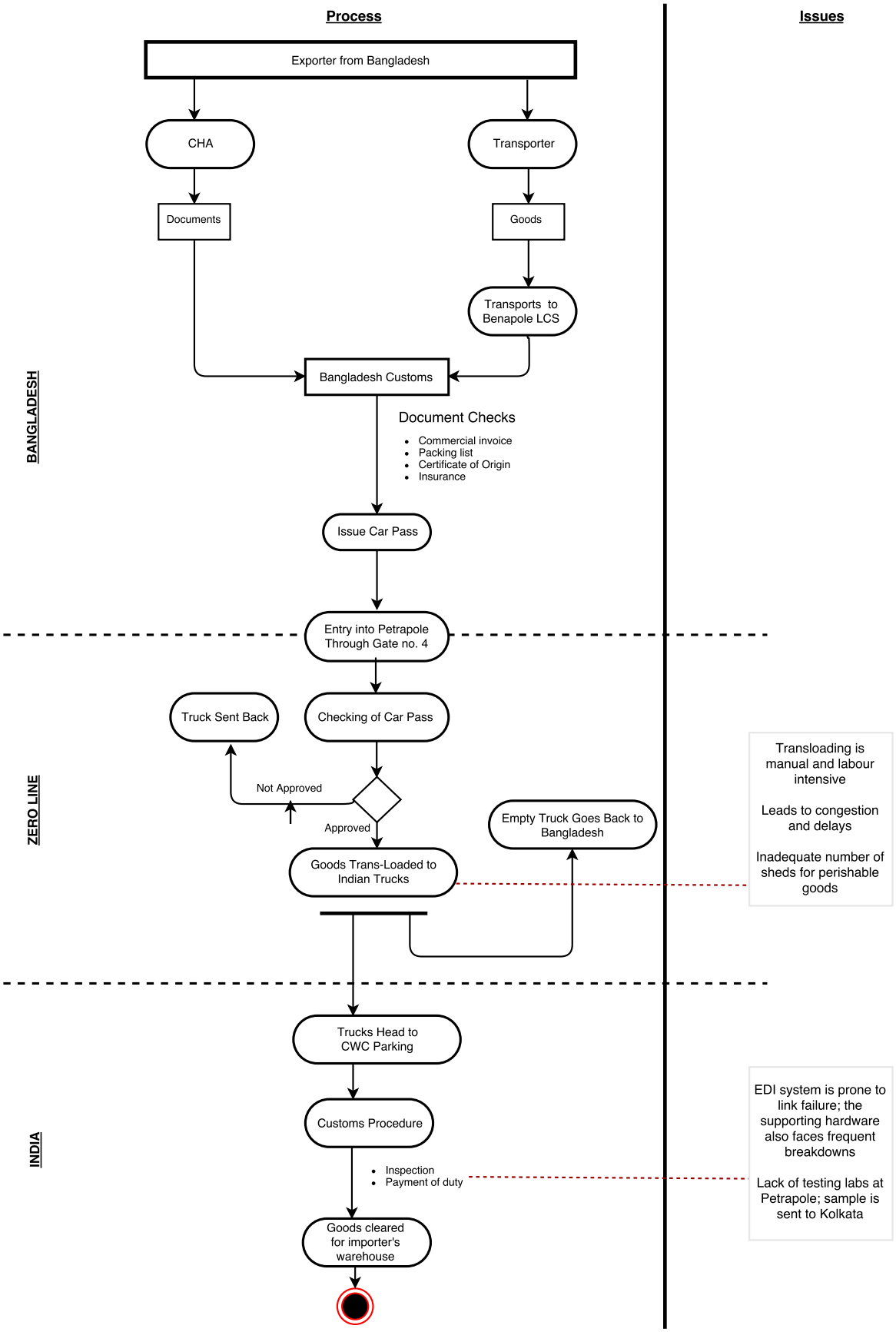
Incoherence in Working Hours/Holidays

Inadequate hours of work at the Petrapole LCS as well as incoherence in holidays (Friday for Bangladesh and Sunday for India) add to operational delays and associated impediments at Petrapole. The working hours for the LCS are from 8.30am-6.00pm, which is insufficient considering the traffic handled. The problem is further compounded by the fact that many officers reside 80kilometres away, in Kolkata, and travel to and back from the Petrapole LCS every day. As a consequence, such officers often fail to report to the LCS before 11am. The aforementioned glitches lead to delayed cargo clearance, and therefore increased road congestion and inflated transport costs.

Movement of Cargo at Petrapole LCS – Import



Movement of Cargo at Petrapole LCS – Export



4.2.2. Plan of Action

Recommendations and Indicative Plan of Action	
Decongestion of Approach Roads	• Requirement of detailed study by the LPAI, entailing analysis of possible routes for movement of trucks as well as measures to increase the width of the highway • Building of flyovers and underpasses as well as increments in width of the roads, which will be key to decongesting NH-34 and NH-35
Speedy Operationalization of ICP	• Escalations in this procedure of inauguration of the ICP • Commencement of operations at the earliest to ensure increased provisions for parking, reduction in delays, prevention of congestion and increased cargo security
Provision for Storage of Sample Goods for Testing	• Need for availability of a provision for storing sample goods • Such storage facilities are imperative to prevent damages, especially in the case of perishable items
Improvement of IT Infrastructure	• Complementing EDI system with better network facilities • Encouraging competition through increased involvement of private network service providers • Providing fillip to paperless procedures
Addressing Manpower Requirements at the Customs Service Center	• Introduction of more staff for filing of documents and dispersal of essential information at the service center • Staff increments imperative given the projected increase in trade activities through the Petrapole LCS
Streamlining of SOPs	• Addressing the incoherence of SOPs between India and Bangladesh through political dialogues and deliberations by trade bodies • Increased focus on trade facilitation agreement

Decongestion of Approach Roads

While broadening the current highway approaching Bongaon happens to be a difficult proposition, owing to habitation and environmental restrictions, a detailed study undertaken by the LPAI, entailing analysis of possible routes for movement of trucks as well as innovative ways to increase the width of the highway, would go a long way in providing a blueprint to improve the approach road.

Overall developments in the form of building of flyovers and underpasses as well as increments in the width (number of lanes) of the roads would be key to decongesting NH-34 and NH-35 keeping in mind the consistent increase in traffic expected for the near future. Measured steps taken towards creation of a layout for tree cover around these all-important roads would also need to be deliberated upon keeping in mind the objective of their widening to accommodate increased traffic volumes. National Highway Division of Public Works Department (PWD) has been working in congruence with the central and state governments towards addressing the issue. Speedy implementation of the aforementioned projects would go a long way in facilitating increased trade volumes handled by Petrapole in the longer term.

Speedy Operationalization of ICP

The plan for an ICP at Petrapole was laid in 2012. However, the process of inauguration of the same followed by commencement of operations has missed several deadlines. According to the Land Ports Authority of India (LPAI), construction of 80 per cent of the ICP has been completed, and the ICP can be inaugurated and made operational on an immediate basis. Escalations in this procedure is a necessity, as the ICP is seen as a potential remedy to some of the major issues faced at the Petrapole LCS, as has been outlined below:

» It would help address the problems posed by the illegal parking mafia at Bongaon, as the ICP would have provisions for parking of around 2,500 trucks

» Installation of plant quarantine would ensure efficient checking of cargo and sufficiently reduce the delays faced in sending samples all the way to Kolkata

» Setting up of an isolation bay at the ICP would streamline the processes for confiscated/sensitive goods at the port, and thereby prevent congestion

» Monitoring facilities such as CCTVs and the presence of security personnel would sufficiently strengthen the overall security environment

Provision for Storage of Sample Goods for Testing

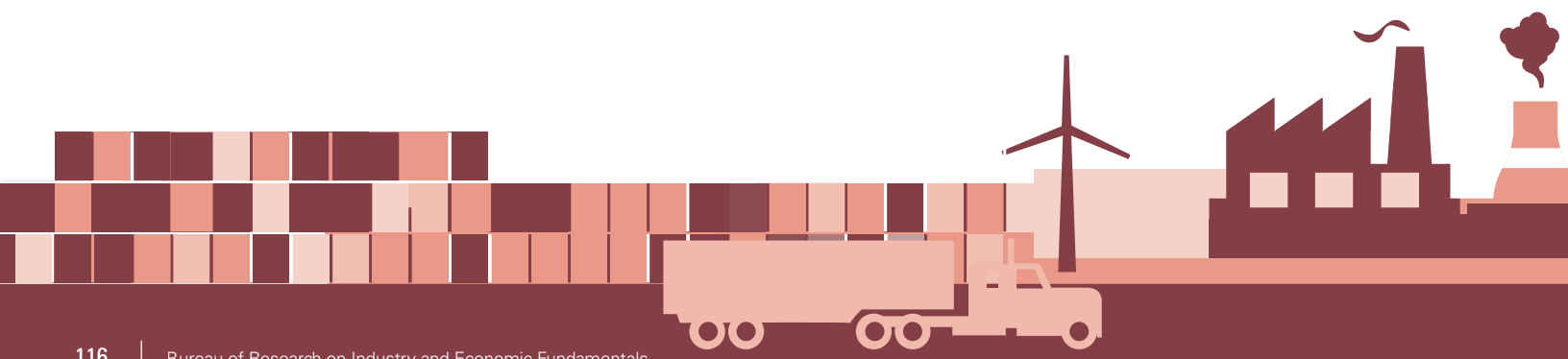
The Petrapole LCS lacks storage facilities for storage of goods that are sent for sampling to Kolkata. Such products include perishable items, such as fishes, which run the risk of going stale. Therefore, availability of a provision for storing such goods at the ICP is imperative to prevent concomitant damages.

Improvement of IT Infrastructure

Frequent failure of the IT system at Petrapole renders the documentation processes cumbersome and time consuming for CHAs. Complementing the EDI system with better network facilities would go a long way in speeding up the procedures considerably and should be encouraged. The port needs to encourage competition through increased involvement of private players and prevent the monopolisation of BSNL at the Petrapole LCS. Introduction of a competitive environment for network service providers, as well as the installation of refurbished network facilities, is seen as the way forward for facilitating required operational adequacies in documentation.

Addressing Manpower Requirements at the Customs Service Center

There is a shortage of staff for filing of documents and dispersal of essential information at the service center in the customs department. Introduction of more staff, in keeping with the expected increase in trade activities especially due to implementation of the Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicles Agreement, would be crucial for overall facilitation of increasing traffic at the land port.



Streamlining of SOPs

The issue of incoherence of SOPs between India and Bangladesh can be addressed through:

- Political dialogues — Bilateral consultation involving commerce ministries of both India and Bangladesh
- Deliberations by trade bodies — Joint meetings between trade governing bodies/chambers of commerce of both the countries

A trade facilitation agreement, which covers issues such as harmonisation of working hours, part-shipment transportation and provision for CHAs to cross borders needs to be discussed and eventually exercised in order to ease the overall trade procedures through the Petrapole-Benapole LCS.

Addressing the Part-shipment Issue

Cargo clearance process, which is otherwise smooth at the Petrapole LCS, gets delayed considerably in cases that involve part-shipment. The clearance process takes average time if part-shipment is a part of the contract between exporter and importer. However, in cases, where part-shipment is not a part of the contract, cargo is cleared only when the entire consignment reaches the Petrapole LCS, thereby leading to delays and congestion. The presence of illegal parking at Bongaon further compounds the problems faced, as trucks containing the same consignment are not released simultaneously from the parking area.

Deliberation on making the part-shipment part mandatory in the contracts between importers and exporters can go a long way in streamlining the cargo clearance process considerably.


PROC
Job Family Compensation

APPRAISAL OF CUSTOMS PROCEDURES

Indian Port Sector

Chapter 5

In line with WTO's Trade Facilitation Agreement (2013), the trends in global trade is displaying a shift towards simplification of customs procedures in a bid to reduce transaction time and cost. In India, however, such reforms are slow paced, and are therefore affecting seamless flow of trade. As per global best practices, it takes less than 12 hours for goods to be cleared from a port, while at certain Indian ports, the procedure takes as long as ten days. Much of the dwell time is lost in procedural deficiencies that exist at the port. These areas of deficiency, and remedial measures thereof have been discussed in detail below.

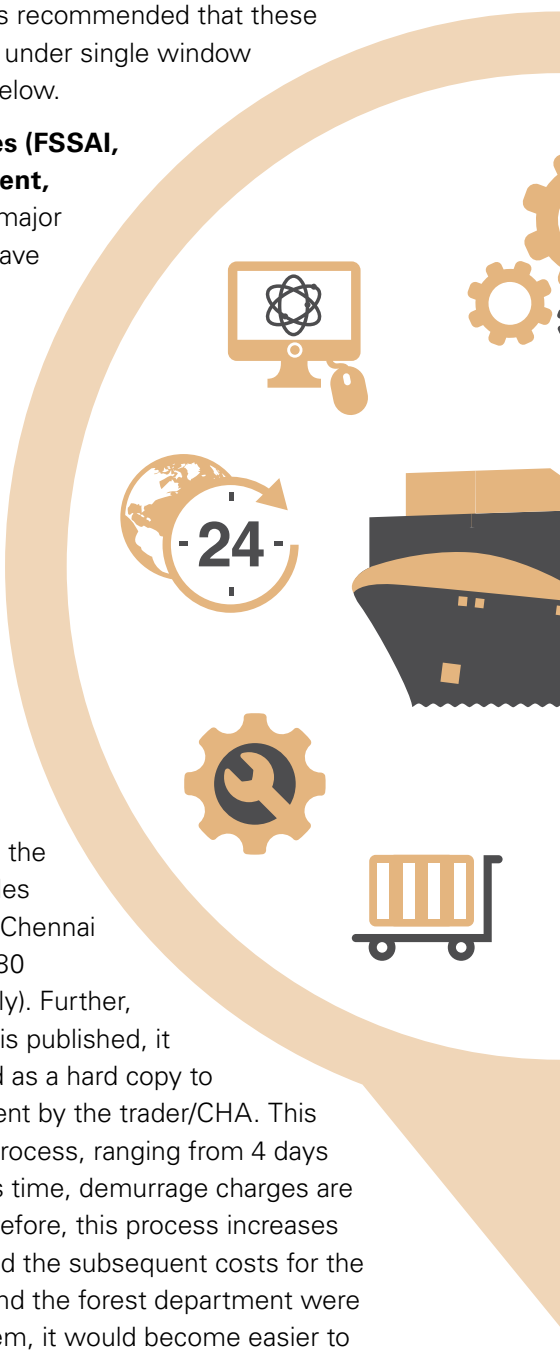
5.1. Strengthening Communication Platforms

In an era when international trade is moving towards automation of procedures, the Indian Custom EDI System (ICES) and Port Community System (PCS) face frequent breakdowns across most major ports in India. This impediment is a resultant of both hardware and software issues. The PCS failed to pick up at major ports due to inherent software issues rendering the integration of different agencies under a single window difficult. As for ICES, the problem lies in both hardware and software. The central server in Delhi has only 25 per cent backup capacity for the data fed into it from ports across India. For instance, if 100 Bills of Entry are filed across India, only 25 will have a backup in the Delhi server. The hardware in use is more than eight years old and requires up gradation. Further, breakdowns of the central server lead to operational issues in servers pan India, leading to delays in clearance procedures, thereby aggravating the issue of congestion at the port. ICES is scheduled for an upgrade in 2016, and an increase in storage capacity is expected by 2017.

There is a need for the aforementioned platforms to be geared up for efficient communication within Indian ports. Both these platforms act as single window systems enabling paperless transactions and seamless information sharing between various stakeholders. Failure of these systems results in long operational delays ranging from a few hours to an entire day, an issue which needs to be resolved by the ports at the earliest.

5.2. System Integration

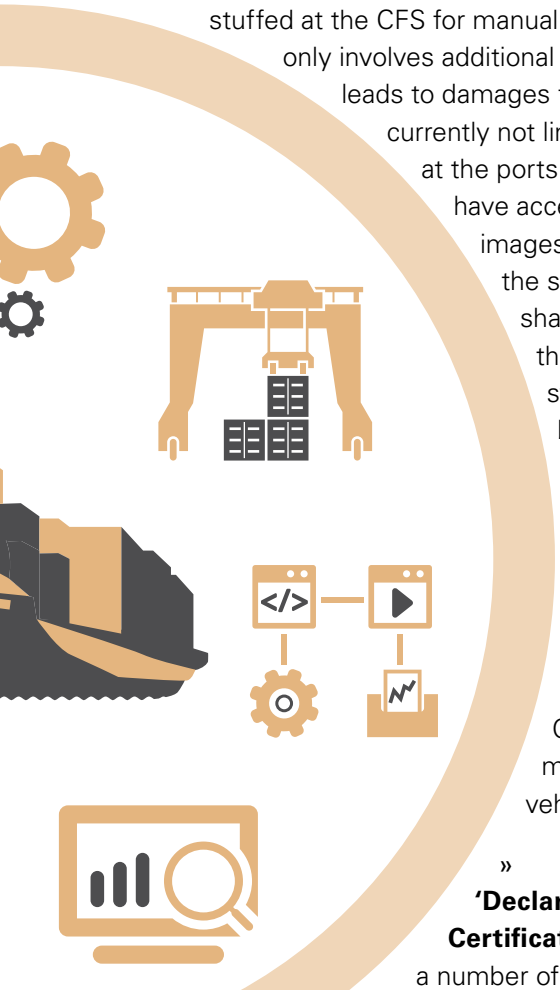
Currently, increased dwell time of cargo at ports is majorly due to the involvement of multiple agencies in final clearance of goods from the ports, which work either physically or digitally through different windows. For trade facilitation, it is recommended that these agencies are integrated under single window systems, as indicated below.



- **Clearance Authorities (FSSAI, BIS, Forest Department, etc.) with EDI:** Most major ports of India do not have testing labs within the port area. As a result, the samples need to be sent to the nearest facilities, which often are at considerable distances from the ports. For instance, from Haldia Dock Complex and Petrapole LCS, the samples are sent to Kolkata (124 kilometres and 80 kilometres away, respectively) and from the VOC Port Trust, samples are sent to Mysore or Chennai (524 kilometres and 580 kilometres, respectively). Further, when a testing report is published, it needs to be presented as a hard copy to the customs department by the trader/CHA. This is a time-consuming process, ranging from 4 days to 30 days. During this time, demurrage charges are applied on cargo. Therefore, this process increases dwell time of cargo and the subsequent costs for the trader. If FSSAI, BIS and the forest department were linked to the EDI system, it would become easier to track the status of clearances and collect the report online. This paperless transaction would decrease the dwell time of cargo at the port and result in faster clearance of cargo, leading to increased availability of storage space, and therefore, enhanced

cargo handling capacity of the port.

- **Linking Scanners, Parking Lot and CFS with EDI:** During the study, it was observed that a container which has been scanned through the CBEC's x-ray scanner, and subsequently cleared, is again de-stuffed at the CFS for manual checking. This not only involves additional costs, but can also leads to damages to cargo. CFSs are currently not linked with the scanners at the ports and therefore, do not have access to the scanned images for examination. If the scanned images are shared with the CFSs through a single window system, accessibility will be enhanced, which would potentially save the time and cost involved in de-stuffing of containers at CFS. Similarly, the RFID linked gate passes also need to be shared with CFSs so as to track the movement of the trucks/ vehicles.



- **Filing of 'Declarations' and Certificates Online:** There are a number of declarations which the trader or his CHA files physically with respect to the cargo. Filing of such declarations should be rendered online, with the digital signature of the trader. There should also be a provision to upload documents required of duty drawback in the EDI system, so that customs can proceed for processing the duty drawback without the submission of hard copies of the declaration. This will facilitate the availability of information at a single portal and help achieve paperless clearance of cargo. Additionally, certificates like FSSAI, BIS, PQ, SAFTA etc. should be uploaded in EDI and allied with international agencies, so that the same certificate is accessible at the delivery location of cargo and other parts of the world.

- **Online Issue of 'Delivery Order' by Shipping Agents and Linking it with PCS:** A Delivery Order (DO) is issued by the shipping agent to the trader or his CHA for clearance of goods at a prescribed fee. This is, a physical process, and therefore is cumbersome and time consuming. The process of fee payment and issuance of DO needs to be accomplished online. Furthermore, the e-DO should be linked with the PCS such that it can be made accessible to all the relevant agencies for expeditious flow of cargo from the port.

- **Integration of Port Community System (PCS) with EDI:** Port Community System (PCS) is intended to integrate the electronic flow of trade related document/information and function as the centralised hub for the ports of India and other stakeholders such as shipping lines/ agents, surveyors, stevedores, banks, CFSs, CHAs, importers, exporters, railways/CONCOR, government regulatory agencies, etc., facilitating exchange of electronic messages in secure manner. The EDI on other hand, is a customs' server for clearance of cargo. Both PCS and EDI need to be integrated such that there is a common interface available for addressing an issue or discrepancy.

Proper connectivity between stakeholders under a single window is the need of the hour to encourage efficiency, cost savings and interoperability between various actors/bodies involved in the process. Through this system, advance filing of documents before the arrival of cargo can also be facilitated to ensure faster clearance.

5.3. Issues with EDI System

While EDI was present at all the selected ports under this study, various issues with the system were reported, as has been summarized below.

- **System Breakdowns:** The EDI system is prone to frequent breakdowns i.e. several times a month. At Petrapole, EDI experiences failures at least 10-12 times a month. This renders the documentation process manual and cumbersome. Apart from this, the issue of non-functional printer is also prevalent, leading to delays in generating print outs from the

service centers.

- **Lack of 24x7 Operations:** Despite a provision for 24x7 EDI, the system remains non-functional on weekends. As a result, the traders/CHAs are unable to upload documents or pay duty. This leads to increase in dwell time of cargo at the CFS/port and incurrence of additional demurrage charges by the traders.
- **Outdated Hardware:** The supporting hardware of EDI including computers, printers etc. are more than 8 years old. This leads to slow processing and recurrent breakdowns.
- **Poor Staff Strength:** The staff strength at the EDI service centers is poor, leading to long queues.

For trade facilitation, continuous investment in hardware and software is a pre-requisite. The EDI system acts as a backbone for customs operations. Thus, it is necessary that the system functions 24x7, and is fool proof, dependable and user friendly.

5.4. User Information Portal on Import Data

Currently, obtaining information on import cargo is a difficult and cumbersome task. Therefore, an import data information portal needs to be created such that the trader can look up similar products imported in the last three months, and gather information on the clearance documents and procedures required for the same. This would make trading procedures easier for the importers. This can also significantly reduce detection through RMS - the major causes of which are issues in documentation - and act as an effective complement to the system. Further through this portal, the users can be informed about various trade facilitation initiatives taken by the government in a timely manner.

5.5. Regular, Transparent and Inclusive Trade Facilitation Meetings

The ports of India hold Permanent Trade Facilitation Committee (PTFC) and Customs Clearance Facilitation Committee (CCFC) meetings for the redressal of user grievances and deliberations on trade facilitation measures. These meetings are represented by multiple stakeholders including port authorities, customs officials, trade, clearing agents, etc.

While these meetings take place, at most of the major ports, there is a need for making these meetings more inclusive and mandatory at all the other ports. A multitude of measures can help realise this objective.

- Involvement of private players/terminal operators and environmental regulators at the meetings in a bid to encourage participation
- Set timelines for achieving the targets/suggestions taken up at these meetings; an ad-hoc monitoring committee should be established to keep a check on this
- Uploading the proceedings of the meetings on the respective port's website in order to ensure transparency
- In case of dismissal of a certain query, the same must be substantiated by the chair of the meeting
- Queries remaining unresolved in two successive PTFC meetings should seek interference from the higher authorities

Participants in PTFC and CCFC meetings at JNP include:

- Port Authorities
- Customs Department
- CONCOR
- Central Railways
- FSSAI
- Regional Plant Quarantine Station
- Police
- Drug Controller
- Selected Representation from User Associations

» Half-yearly representation from Ministry of Shipping at these meetings would act as a confidence building measure among the port users.

» Creation of a pan-India online discussion forum and a mechanism of regular monitoring of the same by a third party agency so that the relevant authorities can be appraised of the issues discussed; this measure will facilitate transparency and ensure timely-action

5.6. Lack of Encouragement for Self-sealing and Factory-stuffing of Containers

Despite a provision in Customs EDI system for self-sealing for manufacturer exporters (Shipping Bill in "S" category) after obtaining permission from Customs, such a facility is not being encouraged at all ports across the country. The users listed a number of issues:

» At major ports likes V.O. Chidambarnar and Haldia, the customs department does not accept self-sealed cargo once it reaches the port and de-stuffing of cargo takes place at the CFS. The cargo is then examined by the customs officer, following which he gives his seal.

» This practice is prevalent despite the presence of the facility of RMS assessment of shipping bills as well as scanners at some ports.

» Similarly, with factory stuffing, the exporter has to obtain permission from the Customs Commissioner to stuff goods in his factory under the supervision of a Central Excise Official, following which customs seal is given for export. However, it was noted that factory stuffing is not encouraged by the customs due to the remote locale of these factories

» Lack of adequate number of customs officials for factory sealing as well as at CFS also leads to the dearth of encouragement for factory stuffing.

Self-sealing needs to be encouraged, especially for the Accredited Client Programme (ACP), wherein the clients who are assessed as highly compliant should be given assured facilitation through RMS.

5.7. Clearance of Part-shipped Containers at the ICD

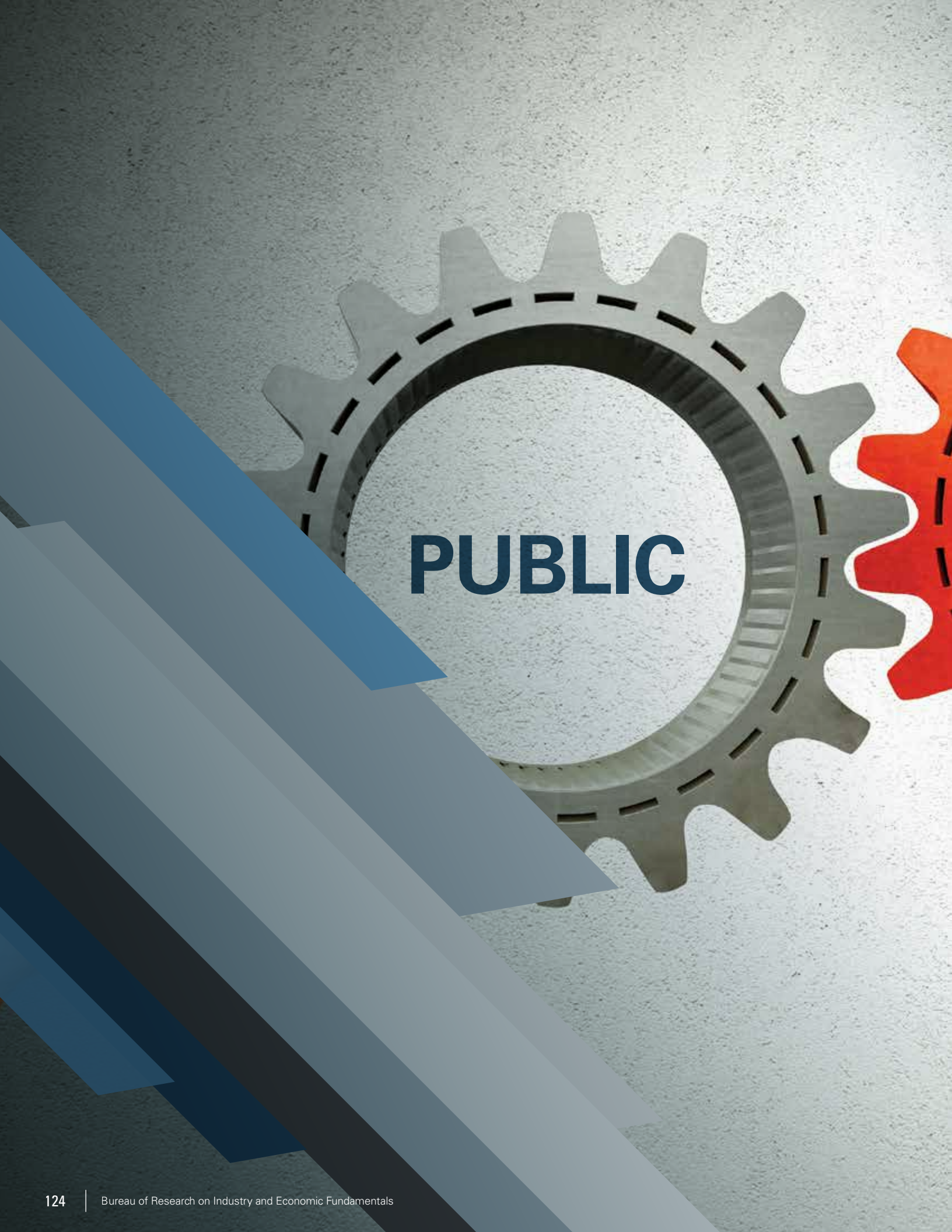
At times, a train may leave the rail yard for ICD with a part-shipment i.e. not all containers of one import consignment would be on the rake. The issue arises when this part-shipment reaches the ICD as there is no system in place for clearing part-shipped containers. Ground rent and ICD charges are levied on the containers till the remaining part of the consignment reaches the ICD. Currently, customs does not allow for shipping lines to split the IGM in case of part-shipment. This has a spill over effect on bill of lading as there is no provision to amend the same as well.

5.8. Need for a 24x7 CFS

One of the most pertinent steps towards trade facilitation through a port involves the introduction of more round-the-clock functioning CFSs in order to reduce congestion at the port, and provide for faster clearance to cargo. At the major ports across India, only one or two CFSs are operational 24x7, leading to congestion at the ports, apart from adding to the time and cost of trade. For instance, at Tuticorin (VOC Port Trust), only CONCOR CFS has 24x7 operations. The traders are left with no flexibility in choosing CFSs. Additionally, not all CFSs are well equipped in terms of infrastructure. Paucity of adequate number of customs officials for round the clock operations also hinders the possibility of 24x7 operability of CFSs. The following steps must be considered to address the issue:

» Private CFSs need to be encouraged to operate 24x7 in order to facilitate faster clearance of cargo and give more flexibility to the trader in terms of choice

» Specific and specialized customs officers/officials can be deputed on a rotational basis to visit the CFSs to address the issue of manpower shortage.


PUBLIC

PUBLIC PRIVATE PARTNERSHIPS IN INDIAN PORT SECTOR

Chapter 6

6.1. Background

Public Private Partnership (PPP) arrangements have a long history in some parts of the globe while being a more recent development in others. In India, private participation, which was otherwise restricted to a few ancillary activities, started to grow across various sectors in the 1990s. After a successful run in different sectors, the model was introduced in Indian port sector in the mid-1990s. Nava Sheva International Container Terminal (NSICT) at JNP, Mumbai, was the first terminal that was developed on a PPP basis. The same period saw crucial amendments to existing policies by authorities and the introduction of more proactive policies to attract private partners into the port sector.

The introduction of private investments in the port sector in mid 1990s was preceded by the government's decision to move towards the Landlord Port concept, wherein the port authorities act as landlords and the port operations are executed by private entities. The new ports were expected to be established as companies under the Companies Act, 1956, and existing port trusts were expected to be corporatised; the plan, however, has not been implemented completely, with the exception of Kamarajar Port Ltd. at Ennore. However, many major ports have made way for private participation, which has resulted in the entry of international players such as DP World, APMT, PSA International, etc. in the Indian port sector. On the other hand, private sector investments in non-major ports have also increased with successful participation in ports like Adani Ports and Special Economic Zone (APSEZ, at Mundra), Pipavav, Hazira, Gangavaram, Krishnapatnam, Dhamra and Gopalpur, among others.

Particulars	10th FYP		11th FYP		12th FYP (Projected)	
Centre	2,630	11.8%	5,480	12.3%	20,670	10.5%
State	916	4.1%	2,759	6.2%	5,563	2.8%
Private	18,805	84.1%	36,298	81.5%	171,548	86.7%
Total	**22,351**	-	**44,536**	-	**197,781**	-

Source: Twelfth Five Year Plan

Table 6.1. Expenditure in Port Projects in 10th, 11th and 12th Five Year Plans (INR Crore)

Since its introduction in India, the PPP arrangement in India has continued to grow and become the most preferred mode of investment. This fact can be corroborated by the overall growth in share of private investments in the port sector (including inland waterways) as per the 10th, 11th and 12th Five Year Plans (**Table 6.1**). Private investment in PPPs accounted for 84.1 per cent of the 10th Five Year Plan's expenditure allocations, followed by 81.5 per cent in the 11th Five Year Plan and 86.7 per cent (projected) in 12th Five Year Plan.

6.2. Present Scenario

The country has 12 major ports and around 200 non-major ports. Of the latter, only around 60 are reported to be operational. Traditionally operations at these ports have exclusively been a government function, but now PPPs have become increasingly, but not completely, the means to manage operations at these ports. The Indian port sector is the third largest shareholder (8 per cent by value of contracts) of PPP projects in the country after roadways and urban development sectors.

Till now more than 50 operational projects, spanning across major (more than 100 projects) and non-major ports (more than 50 projects), have been undertaken by way of public-private partnership (**Table 6.2**)

Status	No. of projects
Terminated	15
Completed	19
Operational	51
Under Construction	52
RFP/Under Bidding	11
RFQ/ EOI Stage	15
Pipeline	4
Total	**167**

Source: Department of Economic Affairs, Ministry of Finance

Table 6.2. Status of PPP Projects in Indian Port Sector

Project	Port	Mode	Cost (INR Crore)	Status	MCA Signed
Fourth Container Terminal	JNP	DBFOT	7,915	Under Construction	06-May-2014
Development of Minor Port	Astaranga, Odhissa	BOOST	6,500	Under Construction	22-Nov-2010
Development of Port	Gopalpur, Odhissa	BOOST	6,500	Operational	14-Sep-2006
Development and operationalisation of Vizhinjam International Deepwater Multipurpose Seaport	Vizhinjam, Kerela	DBFOT	4,089	Under Construction	17-Aug-2015
LNG Port and Terminal Facilities in the Puthuvypeen SEZ	Cochin	BOT	3,700	Operational	12-Mar-2009
Vallarpadam Container Transshipment Terminal	Cochin	BOT	3,200	Under Construction	31-Jan-2005

Source: Department of Economic Affairs

Table 6.3. Major Projects in the Port sector Awarded under PPP

provides a break-up of PPP projects on the basis of their status). In addition to the ones listed in table 6.2, the Ministry of Shipping plans to award 35 more projects to add 259 million tonnes per annum (mtpa) in capacity at an estimated investment of INR 137 billion. Out of these, 23 projects are to be taken up on a priority basis (entailing an investment of INR 52 billion).

Project	Port	Cost (INR Crore)	Status
4th Container Terminal	JNP	Ph—I-4100 Ph-II-2600	Under Bidding
Creation of Mega Container Terminal	Chennai	3,686	Under Bidding
Liquid Terminal	JNP	2,496	In Pipeline
Container Terminal	Kolkata	1,758	In Pipeline
Mechanisation of berths	Paradip	1,000	In Pipeline
Iron Ore Berth	Paradip	681	In Pipeline

Source: Ministry of Shipping

Table 6.4. Upcoming Projects in Port Sector

The current focus is on developing port infrastructure and improving port connectivity as against capacity augmentation, which used to be the thrust area in the earlier years. Out of the 35 projects, the Ministry of Shipping has plans to develop 17 projects on PPP basis, which will entail an investment of around INR 102.77 billion. Among these 17 projects, the major ones would be the container terminal - at Diamond Harbour - at Kolkata Port Trust (INR 17.58 billion), the liquid terminal at JNP (INR 24.96 billion) and the iron ore berth at Paradip port (INR 6.81 billion).

Table 6.3. and **6.4.** lists the major PPP projects that have been awarded and those which are in pipeline respectively.

6.3. Prevalent Engagement Models of PPP in India

Growing number of projects involving private participation makes it evident that PPPs have become increasingly acceptable in India. However, this progress has not been streamlined; instead it has had to pass through various phases defined by the country's political, legal and socio-cultural circumstances, maturity of the country's PPP market, and the financial and technical features of the projects and sectors concerned. These phases have also, over the years, led to innovations in the engagement models followed in public-private partnerships.

Currently global terminal operators principally rely on two types of ownership or operating structures, i.e. concession agreements—in which facilities that

[1]*Sectorial Report: Ports - IBEF*

have been developed using public funds are granted on long term basis to private operators—and Build Operate and Transfer (BOT) arrangements—which leave the ultimate ownership of the terminal land in public hands but grant long-term concessions to companies that finance, build, equip and then operate the terminal.

The various structures/modes operating used for facilitating PPP projects in India include:

BOT (Build Operate Transfer)

The private business builds and operates the public facility for an agreed period of time. Once the facility is operational as agreed, or at the end of the time period, the private entity transfers ownership of the facility to the public (here, public may be construed as the government).

Under this category, the private partner is responsible to design, build, operate (during the contracted period) and transfer back the facility to the public sector. The private sector partner is expected to finance for the project, and construct and maintain the facility. The facility is developed and operated by the private entity predominantly on a royalty or revenue share basis throughout the tenure of the contract.

BOOT (Build Operate Own Transfer)

This is a variation of the BOT model, with the exception of the ownership pattern, wherein the ownership of the newly built facility will rest with the private partner during the period of the contract. This will result in the transfer of most of the risks related to planning, design, construction and operation of the project to the private entity.

BOOST (Build Operate Own Share Transfer)

This model is very similar to the BOOT model, except for the fact that there is an arrangement for sharing of revenue with the private entity for a longer time, even after the rights of the private entity are transferred to the public entity.

DBFOT (Design Build Finance Operate Transfer)

DBFOT is the most prevalent type of arrangement adopted in PPP projects in the Indian port sector. As the nomenclature highlights, the private party assumes the entire responsibility for designing, constructing, financing, operating and maintaining the project for the period of concession. The project recovers its investments through concessions granted or through annuity payments. It may be noted that risks related to designing, financing and construction of the project are transferred to the private partner.

6.4. Major Investment Areas

For capacity enhancement at Indian ports to reach the estimated levels, the Maritime Agenda 2020 has chalked out a comprehensive plan to raise USD 15 billion by 2020 to develop ports, build ships and improve inland waterways in the country. In addition, under the Sagarmala initiative, there are plans of investing an additional USD 10.5 billion for the modernisation of major ports. **Table 6.5.** lists some of

Sagarmala Project	**Hinterland Connectivity and Multi-modal Logistics**
• Development of 10 coastal economic zones • Development of smart port cities at major ports • Development of new major ports and port hubs	• Modernise evacuation infrastructure • Multi-modal logistics grid project—combination of rail, road and inland waterways • Development of high capacity warehouses and container freight stations near ports
Dredging	**Inland Waterways Transport**
• Capital dredging and maintenance dredging • Plans to deepen the drafts at major ports to handle larger ships	• Jal Marg Vikas project—making NW-1 navigable • Barges for navigation in IWT system • Development of 106 new waterways
Marine Tourism	
• Light houses and islands to be developed as tourist hubs • Development of cruise terminals	

Source: Ministry of Shipping, Indian Ports Association

Table 6.5. Investment Opportunities in Indian

the major investment avenues as far as the port sector is concerned. There is huge opportunity for private investments in these areas, developments in which can potentially transform the Indian port sector in the times to come.

6.5. Road Ahead

Public-private partnerships in the Indian port sector – as a solution for infrastructural adequacy, operational efficiency and thereby increased competitiveness – have evolved significantly over a period of time. PPPs have gone through rough phases entailing operational and regulatory ambiguities before making significant headway towards becoming one of the most preferred modes of development in the port sector today.

With the present government strongly focusing on the port-led development, the growth prospects for PPPs in the Indian port sector is expected to witness an upward trend in the near future. The government has already outlined ambitious plans for the revival of the port sector through investments of around USD 11 billion . The realisation of these plans will largely hinge on the structural and systematic improvements the port sector goes through to achieve necessary infrastructural and operational proficiencies in tune with future trade requirements. Some of the key improvement areas can be the following:

- Implementation of landlord model at ports
- Periodic review of key policy documents and regulatory frameworks
- Impetus to market driven tariff regulation
- Level playing field for major and non-major ports in PPP projects
- Single window system for approval of projects, resulting in speeding up of award of projects and increased number of projects
- Improvements in hinterland evacuation plan and port connectivity
- Development of multimodal transport system

[2] *Ibid.*

The Development of Public –Private Partnerships in Indian Port Sector

Advantages

- India among the top five countries with respect to private investments in infrastructure
- Focus on port led development
- Upcoming projects in port development involving an investment of around USD 15 billion by 2019
- Revival of Sagarmala project entailing projected investments to the tune of around USD 11 billion in the next 5 years
- FDI up to 100 per cent under the automatic route for port development projects
- Income tax exemption for private partners for a period of 10 years
- Speedy approval of PPP projects owing to delegation of more power to the Ministry of Shipping regarding financial award of the projects
- Considerable lease period for BOT projects (up to 30 years)

Success Stories

JNP: The NSICT and GTIPL terminals at JNP were exposed to public-private partnership projects in 1998 and 2005 respectively. The third terminal at the port is run by JNPT itself. The container output at the port has increased from 889,978 TEUs in 1999-00 to 4.46 million TEUs in 2014-15. The private terminals have contributed significantly to the increase in output over the years. The share of private terminals in the total output increased from 39 per cent in 2000 to 50 per cent in 2006-07, and further rose up to 68 per cent in 2014-15. The GTIPL/APM terminal handled 2.01 million TEUs - which is the highest among all the container terminals at major ports and more than twice the volume handled by JNPCT - during 2014-15.

Mundra: The Mundra Port was built in 1995 by Gujrat Maritime Board and APSEZ. In 1998, when almost all the traffic was handled by major ports, the port commenced operations with a single berth. The port went on to become India's largest commercial port, crossing the 100 million tonnes mark in cargo handling — the first time by an Indian port in a single year — in FY2014. The port also holds the distinction of being India's deepest port with a draft of 18 metres, which is enough to handle capesize vessels.

Other success stories include: Pipavav, Sikka, Dhamra, etc.

Challenges

- Long drawn procedure for awarding a project owing to approvals from various ministries
- Delays in land acquisition and procedures related to essential clearances leading to deferred project implementation
- Lack of level playing field for major and non-major ports; separate governing bodies and regulatory structures for major and non-major ports
- Ambiguities in bidding criteria for award of projects; excessive focus on revenue share
- Lack of dispute resolution mechanism
- Lack of periodic review of agreement framework (MCA)
- Ambiguities over lack of market based approach by TAMP for regulation of tariff at major ports
- Need for overall improvements in port infrastructure and hinterland connectivity

Bad Experiences

ICTT, Vallarpadam: CoPT awarded the development of ICTT - seen as the future transshipment hub of India - to DP World in 2004 on BOT basis for 30 years. Terminal operations started in 2011 with estimations of handling transshipment traffic of 2 MTEUs by 2014. The terminal handled about 350,000 TEUs in FY2014, marginally up from 312,000 TEUs in 2011 and way below the 550,000 TEUs it needed to break even. The terminal handled only 17,000 TEUs till March 2015, aggregated from various ports in India, out of the 365,000 TEUs loaded in the year. The terminal's poor performance can be attributed to various reasons including:

- Inadequate draft and rail connectivity
- Cabotage policy not allowing foreign vessels to aggregate containers
- Inadequate fleet of feeder vessels
- Tussle between customs and SEZ over jurisdictional issues

Rewas Port: Rewas was to be developed as a deep-water all-weather multipurpose port. Reliance Group had signed the Concession Agreement with the Maharashtra Maritime Board in 2002 at an estimated project cost of INR 5200 Crore. Delays in land acquisition and environmental clearances deferred the project by more than a decade. The project is yet to begin operations owing to these challenges.

Other bad experiences include: Mechanized Coal Berth in Mormugao, PSA-Sical Terminal at VOCPT, Ennore Mega Container Terminal, Chennai Mega Container Terminal, etc.

COMPARATIVE ASSESSMENT OF INDIAN PORTS

Chapter 7

7.1. Introduction

The Indian ports are poised for significant growth of cargo traffic owing to the government's focus on manufacturing projects. Around 90 per cent of merchandise trade in India takes place through the maritime route. Increase in containerised trade coupled with active initiatives of the central government to develop the port sector, is expected to further boost the growth prospects of the country's maritime trade. Given these estimations, increased efficiency in operations, and faster transit of cargo at Indian ports become even more crucial. Unless the infrastructure, facilities and processes at Indian ports are upgraded to global standards, the country's trade potential would have to endure adverse effects leading to non-realisation of capacity utilisation targets.

Although the ports in India have shown considerable improvement over years, benchmarking them against comparable ports in Dubai, Shanghai, Singapore, Rotterdam, Antwerp and Colombo on the basis of selected parameters reveals that there needs to be marked improvement in many parameters to get Indian ports at par with international infrastructural and operational standards.

7.2. Ease of Trading across Borders

India has been ranked 133rd among 189 countries listed in the World Bank's 'Doing Business Report, 2016'. The report evaluated the countries by assessing key parameters across 10 indicators[2] enhancing business activity. **Table 7.1** provides a comparison of parameters under the indicator 'Ease of Trading across Borders', thereby highlighting India's standing vis-à-vis global leaders and competitors.

Since around 95 per cent of India's trade is carried through maritime transport, it is evident that the findings represented in this table is considerably defined by the country's trade through ports. As can be observed, reveals that trading across borders is more time consuming and costly in India compared to competing economies like China and OECD countries, which makes it difficult for local companies to remain competitive as well as access international markets.

Parameter[1]	India	Singapore	Hong Kong (China)	OECD Average
Doing Business Ranking	130	1	5	-
Time to Export (Hours) – A+B	88 + 61	12+4	19 + 1	15 + 5
Cost to Export (USD) – C+D	368 + 104	335 + 37	282 + 52	160+36
No. of Export Documents	8	4	3	4
Time to Import (Hours) – A+B	311+ 67	35 + 1	19 + 1	9 + 4
Cost to Import (USD) – C+D	556 + 139	220 + 37	266 + 130	123 + 25
No. of Import Documents	10	4	3	4

Source: 'Doing Business-2016' by World Bank

Table 7.1. Ease of Trading across Borders – India Vs. Global Leaders/Other Competitors

[1]A - Time spent in border compliance B - Time spent in document compliance

C - Costs of border compliance D - Costs of document compliance

[2]Selected Indicators - Starting a Business, Dealing with Construction Permits, Getting Electricity, Registering Property, Getting Credit, Protecting Minority Investors, Paying Taxes, Trading Across Borders, Enforcing Contracts and Resolving Insolvency

7.3. Assessment of Indian Ports vis-à-vis Global Counterparts

The ability of ports to ensure efficient cargo transfers is the core component of their overall functioning as transport nodes. In the context of growing global trade, ports around the world are competing in their attempt to provide faster transit of the cargo between land and sea. In case of Indian ports - which are in the midst of increasing demand for operational efficiency and burgeoning traffic – improvements in infrastructure and operations are critical to compete with global ports as well as meet the demands of export led economic development in the country.

A comparative assessment of ports can be performed using diverse methods and indicators; however, cargo volume, time efficiency and infrastructure remain the most important indicators on the basis of which port operations can be measured and compared. A comparison of Indian ports against global ports, on the basis of the aforementioned indicators reveals the following outcomes:

- Turnaround Time (TAT) - The average TAT at Indian Ports for the year 2014-15 was 4.01 days (ranging from 1.77 days at Cochin port to 7.01 days at Paradip port) whereas ports such as Singapore, Jebel Ali, Rotterdam and Shanghai have brought TAT down to less than a day.
- Average Pre-Berthing Detention Time (APBDT) - The APBDT for major ports in India for the year 2014-15 was 1.63 days (0.6 days at Kolkata and 3.5 days at Kandla) whereas ports such as Rotterdam, Singapore and Antwerp have no pre-berthing detention at all.
- Infrastructure – Underutilisation of ports owing to inadequate equipment and semi-mechanisation of operational processes results in lack of efficiency and productivity of Indian ports. In comparison, top rated ports like Rotterdam, Shanghai, Singapore etc. are fully mechanized and have enhanced their capacities by moving a step further to automate their port operations.
- Inadequate Draft - Indian Ports are struggling to attract bigger, mainline vessels with higher DWT due to the lack of adequate draft at the berths or channels. The deepest draft available at Indian ports is 18 metres at Mundra - a non-major port. Most of the major ports have a draft depth in the range of 10-14 metres. In comparison, Rotterdam port has berths having draft as deep as 20 metres which can easily accommodate Ultra Large Crude Carriers (ULCC).
- Customs Procedures - Customs procedures have not been fully automated at Indian ports. In addition the level of automation also varies from port to port. The semi-automation of procedures increases the turnaround time of ships, thereby reducing the productivity of the ports. In comparison, at ports like Singapore and Rotterdam, all customs procedures are carried out seamlessly via web based platforms. As a result, around 90 per cent of the clearance related procedures are executed within 10 minutes of submission of relevant documents.
- Hinterland Connectivity - India's current transport modal mix is dominated by road and rail, which cumulatively account for nearly 94 per cent of freight transport. The share of waterways is about 6 per cent, which is considerably low as compared to other advanced economies such as China (47 per cent) and Japan (34 per cent)[3].
- Table 7.2 evaluates performance of Indian ports against six leading international ports on the basis of different parameters under four indicators - global ranking, traffic, infrastructure and performance.

[3]*Source: national transport development policy committee-2013*

Parameters	Jebel Ali	Shanghai	Singapore
Global Ranking[4]	9	1	2
Traffic			
Annual Throughput (MTEUs)	15.25	35.29	33.87
Cargo Throughput (Million Tonnes)	15.5 (MTEUs)	736	575
Infrastructure			
Port Operations	Highly Mechanized and Semi-automated	Highly Mechanized and Semi-automated	Highly Mechanized and Automated
Number of Terminals	4	11	7
Container Terminals	3	4	4
Draft (Metres)	10.2–17	12–16	12-16
Multimodal Connectivity[5]	A, D, E	A, B, C, D, E	A, B, C, D, E
Performance			
Ship Size Accommodated (TEU)	16,020	18,000	19,100
Berth Productivity[6]	156	116	77
Avg. Turnaround Time (Days)	Less than 1	Less than 1	Less than 1
Cargo Clearance Procedures	Mostly automated	Mostly automated	Completely automated
Single Window Integration	Single window	Single window	Single window

Table 7.2. Benchmarking of Indian Ports on Key Parameters

[4]*JOC ranking: Top 50 container ports of the world - 2014*

[5]*A-Road, B-Barge, C-Rail, D-Air, E-Pipeline*

[6]*Berth Productivity is defined as the average of the gross moves per hour for each call recorded. Gross moves per hour for a single vessel call is defined as the container moves (onload, offload and repositioning) divided by the number of hours the vessel is at berth.*

Rotterdam	Antwerp	Colombo	Indian Ports
11	16	30	34 (JNP)
12.30	8.98	4.91	4.16 (JNP)
450	199	67	92.5 (Kandla)
Highly Mechanized and Automated	Highly Mechanized and Automated	Mechanized	Semi-Mechanized
90	50	4	4 (JNP)
9	5	3	3 (JNP)
14-20	12-16	14	8-14
A, B, C, D, E	A, B, C, D, E	A, C, D, E	A, C, D, E
19,224	18,000	16,652	8,000 (JNP)
101	50	113	91 (JNP)
Less than 1	1-1.5	1-1.5	4.1 (average)
Completely automated	Automated	Semi-automated	Few processes automated
Single window	Single window	Single window	No single window

Conclusion

The growth of maritime trade in India is imperative towards improving the overall growth prospects of the country. Indian ports have continually experienced growth in cargo handled in the recent times. As per the Economic Survey 2015-16, cargo traffic in Indian ports has increased by 8.2 per cent to 1052.2 million tons in 2014-15. Such consistent increase in traffic calls for capacity augmentation and modernization of infrastructure at the ports as well as the introduction of updated methods and requisite regulatory relaxations. In this context, the report has extensively focused on key aspects pertaining to the challenges faced and way forward for select trade ports in India. The report has also focused on providing insights on the overall infrastructural, operational and regulatory framework the various ports operate under, with a view to entail key measures for infrastructural improvement including introduction of necessary equipment, indicate streamlined procedures and facilitate seamless execution of operational aspects such as berthing, cargo handling, storage and warehousing, scanning, evacuation from port, etc. Detailed assessments have revealed essential details on the above aspects for the trade ports studied.

Though overall volume of maritime trade in India is consistently increasing, the cargo handling capacity of ports continues to remain below the required levels. A comparison of port capacity and traffic handled over a period of five years reveals that major ports have remained underutilized throughout this period, and the gap between traffic handling capacity and actual traffic handled is still wide. Detailed probes aimed at assessing the underlying factors leading to such a scenario revealed that each of the selected ports exemplify key issues, which often are prevalent in other ports as well. A cursory view of the major issues at each port has been entailed in the following paragraphs:

- **Jawaharlal Nehru Port Trust, Maharashtra**
  JNP faces several issues that hinder the fulfilment of annual container traffic targets. Excessive congestion at the approach road including those in the Y-junction and the service lanes has been a chronic issue for the port. The port also faces operational issues in the form of frequent breakdowns in ICES and PCS, time consuming scanning procedures due to shortcomings in the existing mobile scanner, inadequate mechanisation at the rail yard leading to increased train turnaround time, and lack of inter-terminal movement of trucks among others, which lead to unwarranted delays and cost pressures.

- **Paradip Port Trust, Odisha**
  Despite beating the targets set by the Ministry of Shipping in terms of bulk cargo handled, the Paradip port is working below its capacity owing to infrastructural, operational and policy bottlenecks. High pre-berthing detention, inadequate evacuation mechanization, delays in cargo evacuation, paucity of rakes and high operational costs are some of the identified issues that are challenging the sustainability of the port. The traffic at Paradip Port is also facing increased competition from the fully-mechanized private ports developing in the vicinity.

- **Haldia Dock Complex, West Bengal**
  Being a riverine port, draft maintenance is a perennial issue at Haldia, which is further aggravated by irregular dredging. Operational delays owing to glitches faced in shifting containers to CFSs/ warehouses, lack of testing facilities in Haldia, lack of adequate mechanization and shortage of labour were also evident at the HDC. Regulatory issues in the form of delays in filing of Bill of Entry, inadequacies related to paperless clearance, delays in generation of Bill of Lading by shipping agents, etc. have been frequently reported.

- **V.O Chidambaranar Port Trust, Tamil Nadu**
  The contractual fallacies arising out of the agreement between the port (VOCPT) and the terminal operator (PSA-Sical Terminals Ltd.) has been at the heart of majority of the problems faced by the port, especially as far as replacement and introduction of equipment and enhancing cargo handling capacities are concerned. The port also faces customs related challenges such as lack of 24x7 CFSs and non-approval of self-sealing.

- **Cochin Port Trust, Kerala**
  Over the years, Cochin Port has failed to attract enough cargo to sustain itself. Adding to the woes,

the International Container Transhipment Terminal (ICTT) is working at only 30 per cent capacity utilization. The loss incurred by Cochin port in 2014 has been to the tune of INR 107.81 Crore, with the ICTT weakening its financial standing further instead of bailing it out as was initially perceived. High tariff, inadequate hinterland connectivity, procedural delays, ambiguities in stevedoring policy and issues related to sub-leasing has aggravated the issue further.

- **Attari Integrated Check Post, Punjab**
  Since 2012, certain key issues have continued to plague the ICP, thereby affecting the growth potential of India-Pakistan trade. Need for truck scanners, dearth of adequate cargo handling and monitoring equipment, lack of testing facilities, issues related to storage areas, labour related issues, ambiguities over truck movement, inflated demurrage payments by traders and lack of coordination between governing authorities have been some of the issues observed at the ICP.

- **Petrapole Land Customs Station, West Bengal**
  While the narrow approach road continues to be one of the biggest woes of Petrapole LCS, there is a range of other issues affect its efficiency. The infrastructural and operational challenges faced at the Petrapole LCS revolve around issues related to logistics, breakdown of EDI system and lack of facilities such as testing labs. Operational impediments related to trans-loading, and incoherence of working hours, are also evident at the LCS. Regulatory issues related to delays in customs clearing procedures in case of part-shipment, delayed generation of EP Copy by preventive officers and inadequacies in working hours are notable at Petrapole.

Apart from these port specific issues, certain regulatory issues that require central level action were also demarcated during the course of the study:

- System strengthening: This involves rectifying the frequent breakdowns in the Custom EDI system (ICES) and Port Community System (PCS) at the major ports, in order to facilitate smooth flow of trade.

- System integration: This refers to amalgamation of various procedures and the associated agencies required for cargo clearance under a single digital window such as FSSAI, BIS, Forest Department, scanners, PCS, EDI, CFS, etc.

- Need of a user information portal for import data: A data pool for importers to look up relevant products imported in the previous three months as well as clearance related documentation and procedures required for the same.

- Regular, transparent and inclusive trade facilitation meetings: The PTFC and CCFC meeting at all major ports need to be made mandatory, regular and must include all the relevant stakeholders.

- Encouragement for self-sealing and factory stuffing of containers at all ports

- Clearance of part-shipment cargo: This was reported as one of the major causes of increased dwell time of cargo, which entails a revision of clearance procedures.

- Need for 24x7 CFS: There is a necessity for more round-the-clock functioning Container Freight Stations in order to reduce congestion at the ports and provide for faster clearance to cargo.

With the central government rolling out INR 800 Crore for the development of the port sector in the fiscal budget for 2016-17, the emphasis on streamlining maritime trade continues to gain ground. The budget entails a series of initiatives towards modernization of ports, increments in operational efficiency, implementation of the Sagarmala project, development of new Greenfield ports in the eastern and western coasts of the country and expediting the development of National Waterways. In the times to come, further emphasis on key developmental issues such as enhancing last mile connectivity to the ports, development of inland waterways and coastal shipping, introduction of dedicated terminals based on cargo variants handled, complete mechanisation of ports and emphasis on public-private partnerships among others can go a long way in strengthening the port sector and thereby facilitating India's overall trade growth prospects, as has been indicated in the report.

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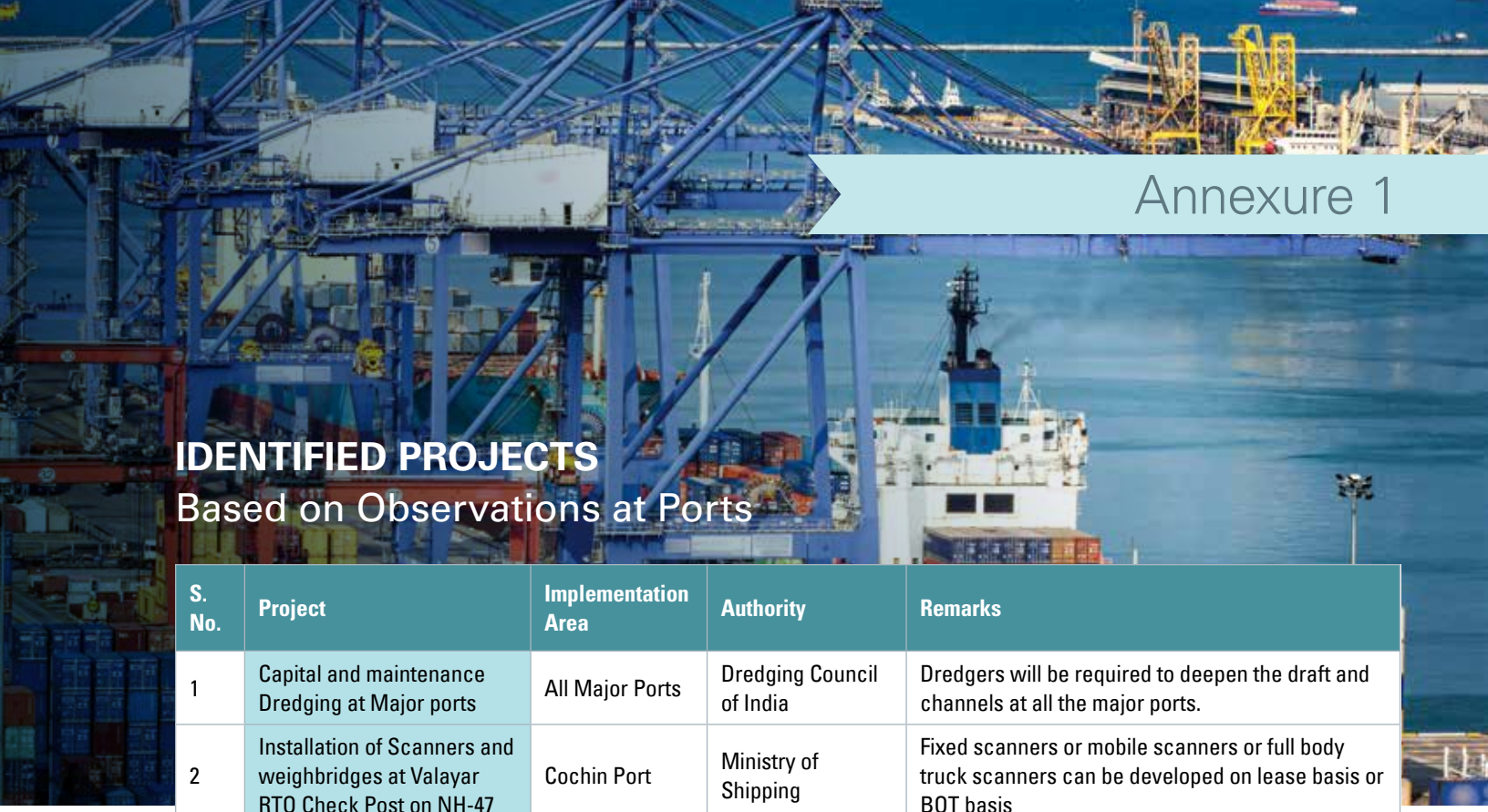

Annexure 1

IDENTIFIED PROJECTS
Based on Observations at Ports

S. No.	Project	Implementation Area	Authority	Remarks
1	Capital and maintenance Dredging at Major ports	All Major Ports	Dredging Council of India	Dredgers will be required to deepen the draft and channels at all the major ports.
2	Installation of Scanners and weighbridges at Valayar RTO Check Post on NH-47	Cochin Port	Ministry of Shipping	Fixed scanners or mobile scanners or full body truck scanners can be developed on lease basis or BOT basis
3	Installation of Container Scanner	Haldia Port	Ministry of Shipping	Container scanner can be developed on a BOT basis along with other required equipment
4	Installation of surveillance and monitoring equipment	Haldia Port	Ministry of Shipping	CCTVs, X-ray machines and other cargo specific security equipment needed
5	Development of pipelines for POL Cargo	Haldia Port	Ministry of Shipping	Pipelines is safe, faster and efficient way of transporting POL cargo compared to transportation using trucks.
6	Mechanisation of terminals through installation of modern cargo handling equipment: Cranes and Silos.	Paradip Port	Ministry of Shipping	Mechanisation of the terminals can be done either by developing terminals of BOT basis with private partnership or only the required equipment can be developed on BOT basis
7	Installation of Cranes, X-ray machines and Full body truck scanners and other security equipment	Attari ICP	LPAI/MHA	The mechanisation of the land port can be taken up on BOT basis or the equipment can be simply leased out.
8	Development of General Cargo Berth	Mumbai Port	Ministry of Shipping	The project will involve Installation of cranes and other cargo holding equipment and their operations
9	Development of Liquid Cargo Berth	Mumbai Port	Ministry of Shipping	The project entails development of Pipelines and other liquid terminal equipment at the berth.
10	Development and maintenance of National Waterways	National Waterways	IWAI/Ministry of Shipping	This will involve dredging of the waterways to make it navigable and their development to make them operational 24*7. Construction of Riverine Barge Jetty wherever required
11	Barges for navigation in IWT system	National Waterways	IWAI/Ministry of Shipping	This would involve procurement of barges and other ancillary set-up for its repair and building to facilitate movement of cargo through inland waterways

Annexure 2

KEY CHALLENGES ACROSS SELECTED TRADE PORTS

Summary of Key Impediments - Infrastructural

Issues	Sea Ports					Land Ports	
	Paradip	Haldia	JNPT	VOC	Cochin	Attari	Petrapole
Inadequacy of Berths	■						
Inadequate Mechanization	■	■		■			
Shortage of Rakes	■			■			
Lack of infrastructure for cargo diversification (Particularly Containers)	■						
Lack of Lab Facilities	■	■				■	■
Inadequate Draft		■	■		■		
Inadequate Connectivity to ICD Irugur					■		
Improper Dredging		■					
Lack of Provisions for Paperless Clearance		■					
Lack of Scanners			■				
Underutilization of Infrastructure				■			
Lack of handling equipment				■		■	
Lack of Rail Connectivity				■			
Lack of Security Related Equipment						■	■
Inadequate Parking Space at CWC							■
Inadequate Number of Sheds at CWC							■

Summary of Key Impediments – Operational

Issues	Sea Ports					Land Ports	
	Paradip	Haldia	JNPT	VOC	Cochin	Attari	Petrapole
Pre-Berthing Detention							
Delays in Cargo Evacuation							
Inflated Cargo Handling Charges							
Delays Due to Workforce Issues – Strikes/Unionism/ Shortage							
Lack of Inter-Terminal Movement							
Underutilization of Terminal Capacity							
Issues with RMS for Exports							
Delays in Shifting Containers to CFS/Warehouse							
Frequent Breakdowns in EDI Software							
Delays Due to Breakdown in EDI Related Hardware							
Road Congestion							
Delays Due to Time Consuming Scanning Process							
Delays in Transportation and Logistics – Particularly at Rail Yards							
Lack of Proper Warehousing Facilities							
Delays Involving Part-Shipment							

Summary of Key Impediments –Policy Related

Issues	Sea Ports					Land Ports	
	Paradip	Haldia	JNPT	VOC	Cochin	Attari	Petrapole
Fallacies in the Berthing Policy							
Lack of Cargo Diversification (especially Containerisation)							
Issues Related Land – Subleasing/Environmental Clearance							
Cumbersome Clearance Procedures for Port Projects							
Higher Tariffs and Uncompetitive Costs							
Ambiguities in Import Valuation							
Reduction in Number of Free Days							
Royalty/Revenue Share Issue							
Customs Related Issues – Pertaining to Transhipment and Container Handling							
Lack of Coordination between Governing Bodies							
Limitations in Truck Movement for Export Trucks							
Inflated Demurrage							
Informal Parking Areas							

Disclaimer

The views expressed as well as the recommendations made in this report – presented by Bureau of Research on Industry and Economic Fundamentals (BRIEF) – are to the best of the authors' knowledge, and on the basis of information available to them through honest and transparent consultations with stakeholders, and review of relevant literature/media releases/organisational data.

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