

# DEVELOPMENT OF EAST COAST ECONOMIC CORRIDOR AND VIZAG- CHENNAI INDUSTRIAL CORRIDOR: Critical Issues of Connectivity and Logistics

*Pritam Banerjee*

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## CONTENTS

TABLES.....	v
ABSTRACT.....	vi
I. INTRODUCTION.....	1
II. CENTRALITY OF LOGISTICS AND CONNECTIVITY TO ECONOMIC CORRIDORS AND PRODUCTION NETWORKS.....	4
III. PORTS AND SHIPPING.....	6
A. Policy Intervention in the Short Term: Focus on Policies and Infrastructure to Create an Enabling Environment for Maritime and Multimodal Cargo Agglomeration.....	8
B. Liberalization of Cabotage.....	10
C. Customs Procedures Related to Transshipment.....	11
D. Operational Costs of Short-Sea Shipping and Terminal Handling Charges.....	12
E. Reforming the Free Trade and Warehousing Zones Model.....	12
F. Bay of Bengal Maritime Initiative.....	13
G. Incentive Program for Developing a Hub Port in the East Coast Economic Corridor and Vizag–Chennai Industrial Corridor.....	14
IV. AIR CARGO.....	16
A. Improving Road Access to Airports and Dealing with Urban Congestion.....	16
B. Attracting More Services to Southeast Asia, East Asia, and the Middle East.....	17
C. Improving Domestic Connectivity (Chennai as southern India’s air hub).....	17
D. Addressing Transshipment and Other Regulatory Issues.....	18
E. Improving Cargo Terminal Management.....	18
F. Development of an Air Freight Station and A Free Zone in the Vicinity of the Airport.....	18
V. LAND BORDER AND TRANSIT REFORMS.....	19
A. Issues Related to Standard Bilateral (or Regional) Motor Vehicles Agreements.....	20
B. Specific Suggestions for Customs Facilitation and Inspection Regimes for a Smart Corridor.....	21
VI. ENABLING LOGISTICS EFFICIENCY.....	21
A. Vendor-Managed Inventory and Supplier-Managed Inventory Models, and the Role of Free Trade and Warehousing Zones.....	22
VII. CONCLUSION.....	26
APPENDIXES.....	27
1 Transshipment Polices in India and Suggested Reforms.....	27
2 Intrastate Movement of Trucks—Procedural Challenges.....	33

3	Trade Facilitation For Production Networks .....	35
4	Cargo Dwell Time at Indian Airports .....	37
5	Origin of Containerized Cargo by Hinterland Region in India.....	38
REFERENCES .....		39

## TABLES

1	Relative Shipping Costs .....	9
2	Relative Terminal Handling Charges in Key Asian Ports.....	15
A1	Transshipment Process Comparison: India vs. Port Klang .....	30
A2.1	Key Challenges for Seamless Logistics in India.....	33
A2.2	Transparent Inspection Regime .....	34
A3	Framework for Trade Facilitation in India.....	35
A4	Cargo Dwell Time at Indian Airports.....	37
A5	Origin of Containerized Cargo by Hinterland Region in India.....	38

## ABSTRACT

The East Coast Economic Corridor (ECEC)—India's first coastal corridor—is an example of an integrated economic development initiative. The key idea behind the corridor is port-based industrial development along the eastern coastal belt of India, in alignment with the goals of the Sagarmala initiative, and integration of India's industrial clusters with value chains extending to Southeast Asia and East Asia.

The development of the ECEC will start with Vizag–Chennai Industrial Corridor (VCIC) which covers about 800 kilometers and includes several port clusters as well as major industrial clusters. Given the importance of the ECEC and VCIC, there is a need for careful assessment of important issues.

This paper provides a detailed discussion of the policies and strategies that should be considered to attain the overall objective of improving shipping and air connectivity in ECEC and VCIC while developing an enabling environment for efficient logistics support businesses that play a critical role in the management of global supply chains. It discusses the issues that inhibit the growth of connectivity and investment in logistics services rather than on physical infrastructure gap analysis for individual ports and airports. It analyzes the legal and regulatory context, focusing on a corridor management perspective that investigates the existing framework of multijurisdictional coordination and rules that govern logistics operations, and advocates for regulatory reform. Specific proposals include policy reforms to support development of a major hub port on the eastern coast of India and a major air cargo hub at Chennai; (ii) the streamlining of customs procedures and removal of protective measures in road freight markets; and (iii) the establishment of Free Trade and Warehousing Zones.

## I. INTRODUCTION

1. The East Coast Economic Corridor (ECEC)—India’s first coastal corridor—will align with the national objectives of expanding domestic markets, pursuing port-led industrialization, and integrating domestic companies into the vibrant global value chains of Southeast Asia and East Asia.

2. ECEC is an example of an integrated economic development initiative. The key idea behind the corridor is port-based industrial development along the eastern coastal belt of India, in alignment with the goals of the *Sagarmala* initiative, and integration of India’s industrial clusters with value chains extending to Southeast Asia and East Asia. The successful development of ECEC is also critical to India’s Act East Policy, which focuses on connectivity agreements in South Asia and Southeast Asia such as the Bangladesh–Bhutan–India–Nepal Motor Vehicles Agreement (BBIN MVA) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC).<sup>1</sup> ECEC will be integrated with existing infrastructure development and upgradation initiatives at its starting and end points, Kolkata and Tuticorin, respectively, which are already part of the Golden Quadrilateral highway development program.

3. The approximately 2,500-kilometer corridor includes seven noncaptive operational ports and two other major ports being planned for development. Most of the key nodes of ECEC are connected by the Kolkata–Chennai rail route. The Vizag–Chennai Industrial Corridor (VCIC) sits approximately in the middle of ECEC and covers about 800 kilometers. VCIC includes several port clusters as well as major industrial clusters that are home to the following industries: metallurgical and chemicals, coal, heavy engineering, textiles, automobiles, electronics, and information technology (IT) and IT-enabled services.<sup>2</sup>

4. ECEC is an important development initiative for the following reasons:

- ECEC focuses on India’s relatively underdeveloped eastern coastal belt and the regions of east and southeastern India. The marginal impact of its successful implementation on productive employment generation and poverty alleviation will therefore be more substantial than similar investments in the more developed parts of India. Successful implementation will also have a positive impact on the reduction of regional inequalities in India.
- While ECEC has competitive clusters in important industries such as metallurgy and chemicals, textiles, automobiles, and heavy engineering, these clusters are relatively poorly connected with global value chains. Despite their natural proximity to Southeast Asian and East Asian economic nodes, the network linkages between these industrial clusters and their natural production network partners in Asia are extremely limited. The development of this corridor is expected to provide the logistical and infrastructural solutions to this connectivity problem while increasing investment opportunities in India for Southeast Asian and East Asian entrepreneurs.
- Energy is a key input for industrial development and ECEC is well placed to be at the heart of a regional gas- and coal-based energy network development plan that includes

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<sup>1</sup> The BBIN MVA was signed in June 2015. The BIMSTEC leaders meeting held in Goa, India in October 2016 resulted in arrangements to explore a regional motor vehicles agreement and to fast-track connectivity initiatives and the BIMSTEC Free Trade Area.

<sup>2</sup> An excellent overview of the industrial clusters, planned infrastructure projects, and economic potential of VCIC is available in Asian Development Bank. 2014. *Vizag–Chennai Industrial Corridor Conceptual Development Plan: Final Report*. Manila



India and Southeast Asia. A long-term development objective of this plan is to have an integrated energy distribution grid and a network of pipelines connecting South Asia and Southeast Asia. ECEC will represent the western terminus of such a grid and benefit from the assured energy supplies and competitive rates it could deliver.

- ECEC is an important part of the Government of India's overall strategy to develop industrial value chains to integrate its economy with those of South Asia and Southeast Asia. Coastal linkages across the Bay of Bengal and overland linkages will connect ECEC with port clusters and highways being planned in Myanmar and Thailand, and onward to other parts of Southeast Asia. The Government of India is investing heavily in some of these projects. In addition, the government's initiative to provide seed financing to Indian firms to help them develop industrial clusters in Cambodia, the Lao People's Democratic Republic, Myanmar, and Viet Nam also fits into the overall framework of ECEC and the development of linkages with Southeast Asia.

5. Given the importance of ECEC to key policy interventions of the Government of India—such as the *Sagarmala* initiative's port-led development concept and the geo-strategically important Act East Policy with its focus on connectivity and industrial value chain integration between India and Southeast Asia—the key micro issues that will define successful implementation require careful assessment. Such micro issues relate to two broad areas: (i) the specifics of infrastructure development and (ii) regulatory reforms that facilitate increased connectivity. It is necessary to address these two issues as well as to promote a conducive business environment. This paper focuses on the microlevel regulatory reforms that will enable the logistical efficiency and connectivity needed to make ECEC a success story.

6. Before delving into the specifics of such microlevel reforms, it is important to put the idea of connectivity in a broader context and understand why policy reforms are as critical as physical infrastructure. In the 21st century, economic corridors are a function of much more than mere geographical connectivity, with many such corridors transcending the limitations of geography. For example, Thailand's export of (perishable) cut flowers to markets in Western Europe makes Thailand a part of the global supply chain of fresh horticultural produce that includes Europe at its center. Good air connectivity and the availability of competent supply chain management with respect to temperature-sensitive cargo have created the right conditions for an effective economic corridor to exist between Thailand and Western Europe.

7. Thus, economic corridors need to do much more than invest in physical infrastructure and develop better regional connectivity in terms of highways, feeder roads, railways, airports, ports, and industrial clusters. While such physical capital is an important aspect of corridor development, if the vision for developing an economic corridor stops at infrastructure development then the chances of success diminish. The vision must include other types of critical interventions to reduce the costs of doing business by creating an enabling environment for logistics and other ancillary business services that provide the day-to-day connectivity solutions needed for an economic corridor to become a competitive participant in sector-specific global production networks.

8. Important examples of such interventions include:

- procedural simplification and trade facilitation to reduce the costs of doing business globally,

- policy interventions and long-term planning that create economies of scale and opportunities for logistics firms to invest in solutions that serve the economic corridor and/or increase the level of connectivity through improved services,
- regulatory changes and procedural simplification at the state and/or central government levels that lead to greater investment in specific logistics business models (e.g., improved trucking solutions or better warehousing models), and
- policy interventions and strategic cooperation between multiple government agencies and the private sector that lead to better utilization of existing infrastructure and the development of new logistics solutions.

9. The four types of interventions described above are broad areas for prioritization and do not represent an exhaustive list of examples. Nevertheless, these interventions provide an overall framework for discussion of the microlevel issues pertinent to ECEC and VCIC. This paper provides a detailed discussion of the policies and strategies that should be considered to attain the overall objective of improving shipping and air connectivity in ECEC and VCIC while developing an enabling environment for efficient logistics support businesses that play a critical role in the management of global supply chains (e.g., road freight, warehousing, and free trade warehousing zones linked to plug-and-play industrial parks).

10. The focus of this paper is on specific microlevel regulatory and policy issues that inhibit the growth of connectivity and investment in logistics services rather than on physical infrastructure gap analysis for individual ports and airports. Such analysis is included in the VCIC final report on which this paper draws for insight.<sup>3</sup> To the extent that this paper refers to infrastructure-related gaps, it does so purely from the perspective of a logistics operator or a user of such infrastructure. Essentially, this paper analyzes the legal and regulatory context of ECEC and VCIC, focusing on a corridor management perspective that investigates the existing framework of multijurisdictional coordination and rules that govern logistics operations, and advocates for regulatory reform.

11. Section 1 of this paper provides a brief discussion of the critical role of logistical solutions and connectivity in the development of economic corridors and their relationship with the trade and investment flows that define production networks. Section 2 covers the ports and shipping sector and section 3 covers the air cargo sector. Both sections 2 and 3 address the relative disadvantage of clusters in eastern and southern India in terms of the extent and quality of connectivity relative to their western and northern counterparts. Policy reforms and suggested strategic planning that can lead to the development of air and shipping hubs that agglomerate cargo and create economies of scale which justify investment by logistics companies are the focus of these discussions. These two sections also discuss trade facilitation measures that address barriers to investment. Section 3 also analyzes specific interventions in terms of trade facilitation and policies related to the movement of trucks and other freight vehicles across borders.

12. Section 4 briefly discusses the importance of linking ECEC and VCIC to an extended regional economic corridor that extends into South Asia and Southeast Asia. Specific issues related to logistics services and the movement of goods overland across international borders are considered in some detail.

13. Section 5 focuses on developing new business models and seeking efficiency in domestic regulations to facilitate logistics operations in India.

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<sup>3</sup> Footnote 2.

14. The appendixes include further discussion of specific policies covered in sections 1–5, including technical details of policy-related problems and their proposed solutions.

## II. CENTRALITY OF LOGISTICS AND CONNECTIVITY TO ECONOMIC CORRIDORS AND PRODUCTION NETWORKS

15. From a business (or more specifically a transactional) point of view, an economic corridor is more than just a physically contiguous economic region linked by transport infrastructure.<sup>4</sup> It represents networked groups of actors that transact regularly and with ease across specific trade routes. Such transactions taken together represent a substantial volume of trade and investment. Thus, each successful trade route is an economic corridor. In the truest sense, an economic corridor develops to support robust production networks that are an outcome of a high level of transactional activity in a specific trade route.

16. Domestic and international exchanges of goods and services are mediated through production networks that connect manufacturers, service providers, specialized individuals, skilled workers, distributors, and consumers. The essential common factor is the existence of connectivity between the participants of a production network. A successful production network is one that allows its participants to optimize their value addition and, therefore, their returns by reducing the transaction costs of participating in such a network.

17. The development of regional production networks (and the relative success and competitiveness of such networks) depends on connectivity and the concomitant reduction of transaction costs. Thus, logistics-related infrastructure that develops connectivity within a region and the quality of such logistics services becomes the most important factor in regional economic integration. Since the quality of logistics services is a function of the quality of physical infrastructure and the regulatory environment under which logistics service providers operate, the infrastructure and regulatory environment emerge as crucial elements of regional connectivity and economic integration.

18. The concept of the role of logistics in the international exchange of goods and services has undergone a radical change. The role of logistics from the perspective of production networks and economic integration is far more complex than its traditionally understood as enabler of physical connectivity. Equally important today are the value-added functions that are required to be offered by logistics service providers.

19. Value-added services can relate to making a product market ready. Some examples include final assembly and/or labeling, management of inventory, collecting and analyzing supply chain data for customers, and collection of payments for clients. As industrial processes become more customized to individual specifications (for both the consumer as well as the producer of goods), the role of such services becomes even more critical to production networks and the overall mix of logistics services.

20. Logistics service providers are also often responsible for a host of services related to compliance with government regulations that govern cross-border (international and domestic) movements of goods and services. Such services include activities required to comply with both public and private standards for product quality and safety. Some of these compliance-related services have

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<sup>4</sup> A transactional point of view refers to the millions of transactions or exchanges of goods, services, knowledge, finance, and other factors of production between different actors.

traditionally been integrated with logistics. For example, customs brokerage services have always been integral to freight forwarding activities. But the increasing complexity of products and rising demand for regulatory oversight have required logistics companies to roll out several specialized services that go beyond customs brokerage in order to credibly connect the different nodes of a production network.

21. The geographical orientation of a trade route is defined less by physical geography than by the availability and cost of services. For example, an exporter of mangoes from West Bengal to Japan might choose to transport the mangoes from Kolkata to Mumbai and then ship the mangoes to Japan through Mumbai. While a western detour to go east does not make sense geographically, Mumbai might provide access to testing facilities for mangoes that are needed to be in compliance with Japanese regulations and/or the most reliable and cost-effective reefer container shipping service. Under such a scenario, the combination of lower cost connectivity and value-added services makes Mumbai the preferred port of export rather than a port on the eastern coast of India that is geographically closer to Kolkata (and Japan).

22. The cost, reliability, and extent of such connectivity and value-added services are dependent on network effects. The World Bank toolkit for trade corridors defines a network effect as a “critical mass of users that lowers costs for all users.”<sup>5</sup> Such network effects have a “symbiotic relationship in that high-quality infrastructure and services can increase usage, which then encourages the provision of superior infrastructure and services, which in turn attract yet more traffic.”<sup>6</sup> The cross-cutting theme of this paper is an analysis of the legal and regulatory changes required to facilitate network effects in ECEC and VCIC by promoting the consolidation of trade and transport volumes through a few links and nodes which, in turn, can encourage improvements in the quality of service.

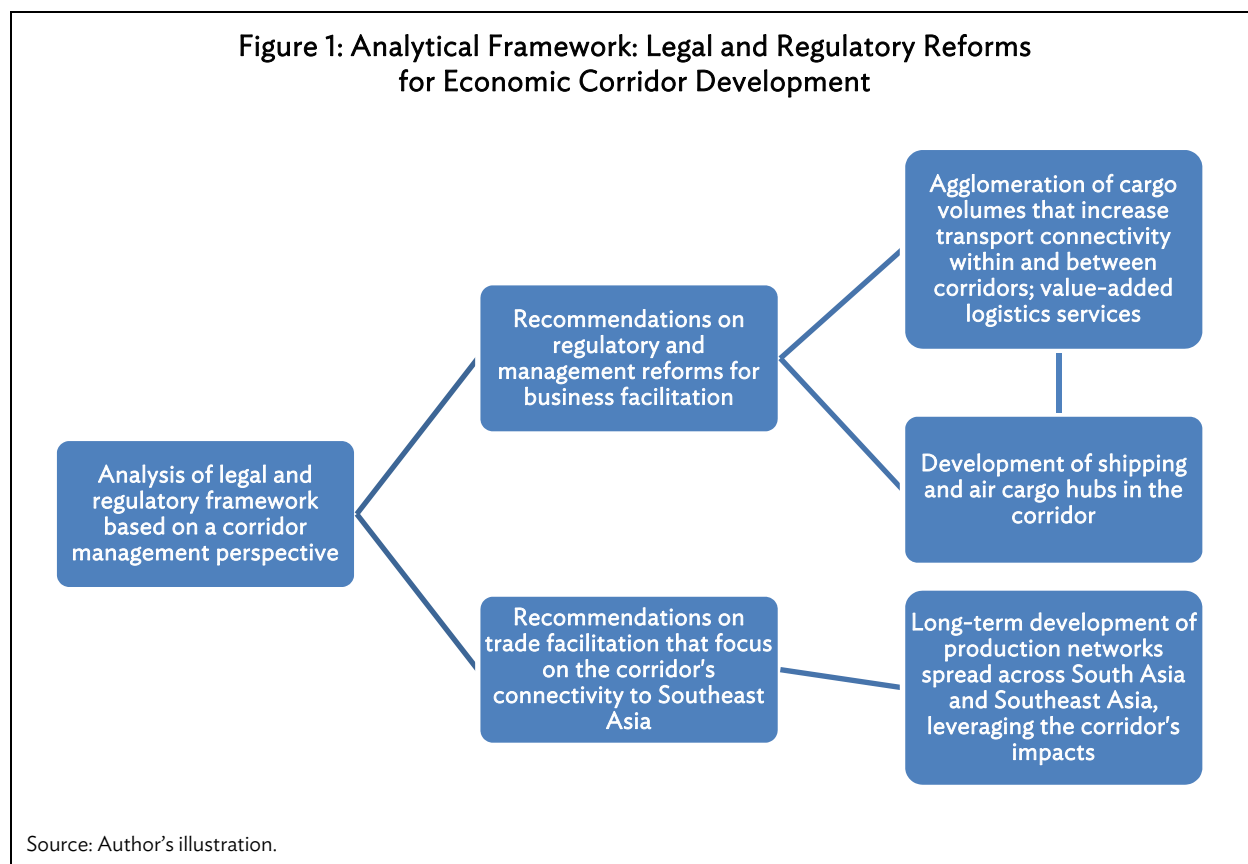
23. The key theme in each of the following sections of this paper follows the basic analytical outline presented in Figure 1.

24. In the regional context of South Asia and the intraregional context of South Asia–Southeast Asia (covering the Bay of Bengal-adjacent regions of southern and eastern India, Bangladesh, Nepal, Myanmar, and Thailand), relatively poor physical connectivity and the resultant high transaction costs have ensured that production network linkages remain weak. The relatively low volumes of intra-South Asian trade, in turn, reduce the incentive for logistics firms to provide effective and low-cost connectivity and value-added services, further increasing the transaction costs of developing effective production networks. The relatively well-connected nodes of Chennai (India), peninsular Malaysia, and Singapore have helped develop robust linkages between India and the Association of Southeast Asian Nations (ASEAN) within wider Asian and global production networks, particularly for automobiles and automotive parts, chemicals, and textiles. However, there is room for greater investment and trade with improvements in connectivity.

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<sup>5</sup> C. Kunaka and R. Carruthers. 2014. *Trade and Transport Corridor Management Toolkit*. Washington, DC: World Bank.

<sup>6</sup> Footnote 5.



### III. PORTS AND SHIPPING

25. ECEC has certain distinct advantages for the development of ports, including India's eastern coast offering (i) relatively deeper drafts that can support the new breed of mega container ships and supertankers, and (ii) an existing rail and road spine that is relatively better developed than its western counterpart.<sup>7</sup> However, India's historical focus on trade with partners to its west—and the trajectory of industrialization that has put most of the traded goods that require containerization (as opposed to bulk) in the natural hinterland of its western coast ports—means that ports on the eastern coast handle very little container cargo.<sup>8</sup>

26. The industrial orientation of ECEC, which includes VCIC, is toward sectors that require break-bulk and other forms of noncontainerized shipping solutions. The presence of many mineral-producing areas in this region led to significant investment in metallurgical and nonmetallic mineral-based industries over the past 5 decades, which is a trend that is continuing. The data for 2008–2013 show that three of the top six most important industrial sectors in terms of investment and industrial growth were resource-based industries that require break-bulk solutions both for inputs and outbound

<sup>7</sup> Larger container vessels (>10,000 twenty-foot equivalent units) require a draft greater than 16 meters. Mundra is the only container port on the western coast that has a draft greater than 16 meters. On the eastern coast, Krishanpatnam, Gangavaram, and Dhamra have drafts greater than 16 meters. Of these three, Krishnapatnam has the most advantageous geographical location given its relatively proximity to existing east-west liner shipping routes. It is also closer to the industrial clusters (textiles and automobiles and automotive parts) in Tamil Nadu and could be easily linked with the Bangalore–Chennai industrial corridor.

<sup>8</sup> See Appendix 5 for origin of containerized cargo by state.

final products. These industries are chemicals and petrochemicals, metallurgy, and nonmetallic mineral industries. The other three include information technology, which has limited shipping and logistical requirements; textiles; and automobiles and automotive parts.<sup>9</sup>

27. While textiles and automobiles and automotive parts require containerized solutions, these industries are clustered around Chennai, which is the only port in ECEC that handles a significant number of containers. The logical outcome of such an industrial orientation is that, with the exception of Chennai and Kattupalli, the main focus of ECEC ports is break-bulk and raw materials such as petroleum, oil and lubricants; coal; iron ore; fertilizer; and agricultural raw materials.<sup>10</sup> For VCIC ports, coal and iron ore together account for about 57% of total throughput; liquids and petroleum, oil, and lubricants comprise 12%; general cargo accounts for 26%; and container traffic forms a mere 5%. The newly developed ports of Gangavaram and Krishnapatnam are heavily dependent on coal, which accounts for 80% of all traffic.<sup>11</sup> The four VCIC ports located in Andhra Pradesh—Vishakhapatnam, Gangavaram, Kakinada, and Krishnapatnam—account for only 3%–4% of India’s total container cargo volume.<sup>12</sup>

28. The VCIC final report predicts an expansion in industrial output of approximately 3.0–7.5 times over the next 25 years under different scenarios.<sup>13</sup> Such expansion will create significant additional demand for containerized cargo solutions in the corridor’s ports. While a “business-as-usual” scenario would increase the share of VCIC ports in India’s total container traffic handling to about 6% by 2020, new investments in sectors that require container-based evacuation solutions could see this share increase more significantly.<sup>14</sup>

29. However, relatively low container-based cargo volumes currently translate into a lack of business interest for developing regular liner connections originating from India’s eastern ports, especially VCIC ports. Except for Chennai, none of the eastern coast’s ports have direct liner services to major economic nodes in Southeast Asia or East Asia. The focus of eastern coast ports on bulk is also reflected in the fact that most ECEC and VCIC ports are much better connected by bulk and petroleum, oil, and lubricant routes with Southeast Asia and East Asia than with container liner shipping and feeder routes.<sup>15</sup>

30. The goal of integrating with global production networks cannot be achieved without establishing low-cost containerized shipping linkages with major global and (especially) regional industrial nodes in Southeast Asia and East Asia. Regular, cost-effective linkages with Southeast Asia and East Asia are an essential condition for the development of VCIC and the larger ECEC. This can be viewed as an example of the “chicken-and-the-egg” problem; that is, liner connections require that high trade volumes be present, yet (in some ways) having liner connections creates the enabling environment needed to establish such volumes.

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<sup>9</sup> Footnote 2, p. 50.

<sup>10</sup> Footnote 2, p. 197.

<sup>11</sup> Footnote 2, p. 199.

<sup>12</sup> Based on discussions with representatives from the shipping and freight forwarder community and Government of India. Port Statistics. <https://data.gov.in/dataset-group-name/port-statistics>

<sup>13</sup> Footnote 2, p. 53. Analysis in the VCIC final report shows that Tamil Nadu and Andhra Pradesh can be competitive in sectors such as electronics, machinery, pharmaceuticals, and food processing in addition to textiles and automobiles and automotive parts.

<sup>14</sup> Footnote 12.

<sup>15</sup> Government of India, Planning Commission. *National Transport Development Policy Committee Report, 2012*. (<http://planningcommission.nic.in/sectors/index.php?sectors=National%20Transport%20Development%20Policy%20Committee%20>).

31. The natural hinterland of all eastern coast ports accounts for about 21% of India's total container cargo,<sup>16</sup> while eastern coast ports, including the Chennai–Tuticorin and Kolkata–Haldia port clusters, account for about 35% of the country's total container traffic (in terms of million twenty-foot equivalent units).<sup>17</sup> In other words, there is sufficient container traffic to justify better liner shipping services. However, exports from and imports to ECEC face significant transaction costs because a large portion of Indian cargo is transshipped through either Colombo (Sri Lanka), Singapore, or Port Klang (Malaysia), thereby adding additional shipping and handling costs. This also means that routes connecting ECEC to Southeast Asia and East Asia are usually served by feeder services rather than liner services, and are thus unable to take advantage of economies of scale and greater frequency of services. Finally, such transshipment makes the ECEC hinterland dependent on western coast ports for services to the Middle East, Europe, and Africa since ECEC ports, including Chennai, are not a priority stop on routes connecting these regions with Southeast Asia and East Asia.

32. Not having direct liner services is not a problem for a port if cost-effective and regular feeder services are available, an effective port–industrial network exists, and a major hub port provides a strong network of liner routes. Existing models in the People's Republic of China, Europe, Japan, and New Zealand comprise successful coastal corridors that have evolved to integrate smaller ports served by short-sea shipping and specialized ports (handling bulk and petroleum, oil, and lubricants) with a major hub port. Thus, the priority areas of intervention require policies, incentives, and infrastructure to develop a coastal corridor; a major port with a rich network of liner routes that evolves into a regional transshipment hub over time; and the development of a port-based industrial complex that serves global production networks.

#### **A. Policy Intervention in the Short Term: Focus on Policies and Infrastructure to Create an Enabling Environment for Maritime and Multimodal Cargo Agglomeration**

33. While there is a business case for improved access to direct connections at eastern coast ports and more services on these routes, it can only happen if the volume of containerized cargo increases. In the medium term, this will require the agglomeration of cargo originating in eastern India at one major port that serves as a node for the port clusters of VCIC, Kolkata–Haldia, and Chennai–Tuticorin.

34. There is strong evidence that if sufficient cargo volume is generated and enabling conditions exist then liner shipping companies will be more than willing to make a slight detour in their established routes to make a port call.<sup>18</sup> Chennai, or more suitably a port with greater draft such as Krishnapatnam, would not represent a significant detour for several existing east–west routes connecting Southeast Asia and East Asia with Europe, Africa, and the Middle East.<sup>19</sup>

35. As mentioned above, the volume of existing container cargo that originates in the eastern coast's natural hinterland is a significant percentage of India's total. Additional cargo volume would be generated if services (and attractive rates) were available for cargo from northern India's hinterland, especially the eastern Uttar Pradesh and eastern Madhya Pradesh industrial clusters that are currently using western coast container terminals.

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<sup>16</sup> Footnote 2, p. 221.

<sup>17</sup> Footnote 12.

<sup>18</sup> This assessment is based on the author's discussions with liner shipping companies.

<sup>19</sup> Mega container vessels such as the Maersk Triple E class require drafts greater than 16 meters. This makes Krishnapatnam an ideal port.

36. Being a regular call on such east–west routes would increase the number of services available to directly connect an eastern coast hub port with Southeast Asia and East Asia—thereby enabling regional-production-network-oriented connectivity—as well as with emerging markets in Africa while also offering lower-cost connections with Europe.

37. Two added disadvantages of not having effective coastal short-sea shipping integrated with a domestic hub port with multiple direct connections to major trading partner destinations are (i) the additional terminal handling charges, which are often in costlier locations;<sup>20</sup> and (ii) additional transit time.<sup>21</sup> Table 1 shows the cost disadvantages faced by Indian cargo due to the lack of a major transshipment hub in the country.

**Table 1: Relative Shipping Costs** (\$ per twenty-foot equivalent unit)

Origin	Imports from Rotterdam	Exports to Rotterdam	Imports from Los Angeles	Exports to Los Angeles	Imports from Hong Kong, China
People’s Republic of China	...	3,303.53	1,830.60	3,303.53	...
Hong Kong, China	1,622.96	3,396.51	1,900.88	3,396.51	...
India	2,518.48	2,930.96	8,631.37	2,930.96	2,307.00
Japan	1,770.69	3,738.81	2,148.52	3,738.81	...
Republic of Korea	1,396.59	3,383.80	1,773.46	3,383.80	...
Singapore	1,504.60	3,225.59	2,191.75	3,225.59	...
Sri Lanka	2,251.49	2,613.96	8,644.36	2,613.96	1,964.00
Taipei, China	1,281.69	3,257.26	1,858.63	3,257.26	...

... = no data available.

Source: Economist Intelligence Unit.

38. Despite East Asia being farther than India from Rotterdam in terms of distance, the cost to import from Rotterdam is much lower in East Asian economies with major hubs. While part of the difference can be explained by economies of scale resulting from larger trade volumes, 70%–80% of the difference in price is essentially due to additional transshipment costs for cargo imported into and exported from India. This difference is underlined by the lower costs of imports and exports between Rotterdam and Colombo. The latter port essentially serves as India’s hub for major trunk routes to and from Europe as well as East Asia. The difference in costs between India and Sri Lanka for imports from Hong Kong, China is also evident in Table 1.

39. India’s huge cost differential with East Asian economies (6–8 times greater) in accessing markets on the western coast of the United States and the Americas through ocean shipping is also due to the relative lack of liner routes leading to additional transshipment costs. Some consignments

<sup>20</sup> Terminal handling charges are often a function of the level of technology and efficiency at ports. However, costs at Indian ports are lower relative to major hubs and greater investment in technology and infrastructure would not add to costs to the extent that Indian ports become less competitive. Relatively lower labor costs in India compared with those in Malaysia; Singapore; Taipei, China; and Thailand; and would keep terminal handling charges in Indian ports relatively lower as well.

<sup>21</sup> J. Hoffman. 2012. *Corridors of the Sea: An Investigation into Liner Shipping Connectivity*. ([http://www2.ulpgc.es/hege/almacen/download/7099/7099518/hoffman\\_2\\_081012.pdf](http://www2.ulpgc.es/hege/almacen/download/7099/7099518/hoffman_2_081012.pdf))



might even have to be transshipped twice (e.g., Port Klang and Hong Kong, China), generating additional handling costs that diminish India's overall export competitiveness.

40. The policies enumerated below should be considered for developing a major hub port on the eastern coast of India that can serve as a node for cargo agglomeration in ECEC and VCIC.

## **B. Liberalization of Cabotage**

41. Section 407 of the Indian Merchant Shipping Act, which dates to 1957, reserves coastal shipping between two Indian ports (cabotage) for Indian-flagged vessels.<sup>22</sup> Given the paucity of quality shipping options using Indian-flagged vessels, this means that a robust hub–spoke model in which several Indian ports could be connected to a major Indian port with the help of coastal liners—so that this port could act as a major transshipment point and consolidator of cargo—has not emerged. Since cabotage rule prevents the movement of cargo from one Indian port to another by foreign-flagged vessels, about 30% of Indian container cargoes are transshipped to hubs like Colombo and Singapore before being transported to different destinations in India.<sup>23</sup> This not only results in a loss of potential revenue by Indian ports, but also adds an extra layer of costs and time to Indian exports and imports, thereby negatively impacting the country's competitiveness. The lack of a transshipment hub also means that Indian exporters face a reduced menu of choices in terms of direct or one-stop routes to major markets.

42. Developing a hub port on India's eastern coast will not be easy as it does not fall on the primary east–west trade routes followed by major liner shippers. A detour for a mother vessel makes sense only if the port generates enough domestic cargo. It will be extremely difficult for an individual Indian port to generate enough cargo to make liner shippers increase the frequency of their visits and add more connecting routes. The answer to this problem lies in the consolidation of Indian outbound and inbound cargo into a single hub port using measures to incentivize coastal cargo routes, as well by allowing foreign-flagged carriers to ply India's coastal routes and service the intra-Indian coastal cargo market.

43. These measures would lead to the greater consolidation of cargo and an increased number of services at eastern Indian ports. The liberalization of cabotage by allowing foreign-flagged vessels into the Indian market would also lead to greater investment and improved service quality in coastal shipping, thereby integrating a host of value-added logistical services provided by large global shipping firms and large Indian logistics firms with the flexibility to leverage the use of chartered foreign-flagged vessels to develop new services. The sheer dependence of Indian export–import cargo on foreign-flagged vessels underlines the need for such flexibility.<sup>24</sup>

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<sup>22</sup> For a formal investigation in the linkage between cabotage liberalization and shipping costs, refer to R. Cavana. 2004. A Qualitative Analysis of Reintroducing Cabotage onto New Zealand's Coasts. *Maritime Policy Management*. 31 (3); and A. Baird, J. Hoffman, and G. Wilsmeir. 2002. The Chilean Maritime Highway. IAME Panama 2002 Conference Proceedings. For a formal investigation into restrictions on liner shipping, including cargo reservation by flag, refer to F. Bertho, I. Borchert, and A. Mattoo. 2014. The Trade-Reducing Effects of Restrictions on Liner Shipping. *World Bank Policy Research Working Paper*. No. 6921. Washington, DC: World Bank.

<sup>23</sup> These figures were quoted by the Government of India's Minister of Shipping in response to parliamentary questions in March 2015.

<sup>24</sup> According to data released by the Government of India, Ministry of Shipping, Indian-flagged vessels carry only about 5.3% of India's total export–import trade.

### Box 1: Sections of the Indian Merchant Shipping Act Relevant to Coastal Trading

#### Section 407

- (1) No ship other than an Indian ship or a ship chartered by a citizen of India or a company which satisfies the requirements specified in clause (b) of section 21 shall engage in the coasting trade of India except under a license granted by the Director-General under this section.
- (2) A license granted under this section may be for a specified period or voyage and shall be subject to such conditions as may be specified by the Director-General.
- (3) The Central Government may, by general or special order, direct that the provisions of subsection (1) shall not apply in respect of any part of the coasting trade of India or shall apply subject to such conditions and restrictions as may be specified in the order.

#### Section 21

A ship shall not be deemed to be an Indian ship unless owned wholly by persons to each of whom either of the following descriptions applies: (a) a citizen of India; or (b) a company which satisfies the following requirements, namely: (i) the principal place of business of the company is in India and (ii) at least seventy-five per cent of the share capital of the company is held by citizens of India.

Source: Excerpts from the Government of India, Ministry of Shipping. *Merchant Shipping Act*. <http://dgshipping.gov.in/Content/MerchantShippingAct.aspx>

44. There is no need for an amendment of the Indian Merchant Shipping Act. The government is already empowered to relax the licensing of ships for coastal trade in section 407, subsection 3 of the act.

45. As can be seen in Box 1, the liberalization of cabotage would simply require the government to utilize powers already granted to it in order to allow foreign-flagged vessels to ply coastal routes either wholly or strategically between those ports that, if linked, would lead to greater agglomeration of export–import cargo and attract liner shipping interest.

### C. Customs Procedures Related to Transshipment

46. The development of a coastal shipping network feeding into a hub port can only be effective if customs procedures related to transshipment are smooth, efficient, and expeditious. Transshipment procedures in Indian ports remain extremely cumbersome and are overly dependent on a physical inspection and verification-oriented regime. Moreover, procedures on the ground differ from port to port, adding another layer of uncertainty to the process.

47. The previous recommendation, if implemented, means that the same vessel would carry domestic and international cargo. Therefore, the administrative mindset and procedures of customs—which typically involve more rigorous physical inspection of cargo, restrictive cargo segregation, and additional unloading procedures—would apply.

48. The short-term development of a hub port and its medium-term evolution into a transshipment hub require a complete overhaul and reform of existing customs procedures. Appendix

1 provides detailed recommendations on port, airport, and multimodal transshipment-related reforms that can be considered. As a developmental measure, a specific port such as Krishnapatnam could serve as a pilot for the adaptation of such customs procedural reforms.

#### D. Operational Costs of Short-Sea Shipping and Terminal Handling Charges

49. Running regular coastal services requires ensuring service quality and an adequate fleet of ships to support the business. Except for four large firms, including the Shipping Corporation of India, which accounts for almost a third of India's total deployed tonnage, no other shipping company in India has more than 10 vessels. Smaller players, who cumulatively account for over 50% of India's total deployed tonnage, essentially serve the chartering market. Unless the larger and more organized firms are willing to invest in short-sea shipping along India's coasts, as well as along the Bay of Bengal's regional coastal routes, the cost and quality of services will not come down.

50. The government and non-major private ports, which are technically under the purview of state governments, should consider the following key initiatives:

- **Development of better infrastructure for coastal shipping at ports.** The central government has already come up with a scheme (announced in March 2014) to support major ports in the development of coastal berths and capital dredging for the deepening of coastal berths and navigational channels. However, the non-major private ports are outside the purview of the central government. State governments can seek central government help or use public-private partnerships to provide similar support to ports under their purview.
- **Reduced berthing charges for coastal ships.** As part of the coastal shipping development scheme announced in March 2014, the central government will also provide support to major ports to reduce berthing charges for coastal vessels. Again, the minor private ports that play a key role in central connectivity have been left out. This is another potential area of intervention from either state governments or for the extension of a central government incentive developed in conjunction with private port operators.
- **Elimination of the excise duty on bunker fuel.** The government can consider the elimination of the excise duty on bunker fuel for all ships (Indian- and foreign-flagged) for a period of 5 years as an incentive to develop the coastal cargo business.

51. These benefits should not be restricted to Indian-flagged vessels. Indian ports and businesses need multiple coastal shipping options and high-quality services. The provision of services that develop overall logistical competency is essential; the flag of the vessel providing the service should be irrelevant.

#### E. Reforming the Free Trade and Warehousing Zones Model

52. The establishment of Free Trade and Warehousing Zones (FTWZs) was announced as part of the Foreign Trade Policy, 2004–2009 to create trade-related infrastructure to facilitate the import and export of goods and services. FTWZs are a special category of Special Economic Zones (SEZs) that are governed by the provisions of the SEZ Act, 2005 and associated notified rules. FTWZs are designated as foreign territory and envisaged as integrated zones to be used as international trading hubs.

53. However, some key regulatory challenges and procedural problems have kept the FTWZ business model from meeting its full potential. These problems and potential solutions are discussed in detail in section 4.

54. A combination of the policies discussed above has been used in successful port development initiatives elsewhere in the world. A good example is the port of Montevideo, Uruguay, which used the liberalization of cabotage laws; a strong customs facilitation program (including an agreement between the municipality of Montevideo, national customs department, and port authority of Montevideo to facilitate the movement of cargo from the city to the port); and agreements to help develop the southeastern maritime market to increase trade volumes and stabilize demand for services (even during the global financial crisis and its aftermath in 2008–2010).<sup>25</sup>

55. Other areas of intervention could be considered by the government as strategic initiatives to develop the maritime sector in ECEC and VCIC by focusing on connecting the wider Bay of Bengal region and its hinterland. Two important areas of intervention include business development and related regulatory reform of the international short-shipping market in the Bay of Bengal's littoral countries, with India in a leading role, and an incentive-based program to develop a regional hub port. Both ideas are discussed below in greater detail.

#### F. Bay of Bengal Maritime Initiative

56. The Government of India has made a modest start under its Act East Policy for developing better connectivity with Myanmar and Bangladesh.<sup>26</sup> Over the medium term, the development of new services would have to be integrated into a logistics business development policy for shipping, with the long-term focus of developing a regional transshipment hub through fast-tracking the conclusion of agreements that would provide the institutional support to such business development:

- **Support for a logistics business development policy for the Bay of Bengal.** The long-term, sustainable development of a maritime market in the Bay of Bengal region (BBR) will depend on the development of new services that lead to further agglomeration of cargo. For example, inclusion of Port Klang and Dawei in the coastal shipping route (Chennai–Krishnapatnam–Yangon–Port Klang) would allow for the agglomeration of west-bound cargo from Southeast Asia in Krishnapatnam and Chennai, generating the volumes needed for the development of a greater number of Bay of Bengal coastal services while also helping the growth of transshipment business in ECEC and VCIC. Such new services can only be developed if the logistics business community is taken into confidence regarding the operational feasibility and support available for developing alternative service options to current models. Institutional supporters of ECEC and VCIC, such as the Asian Development Bank, and VCIC state governments could consider

<sup>25</sup> G. Wilmsmeier, I. Martínez-Zarzoso, and N. Fiess, 2011. Regional Hub Port Development: The Case of Montevideo, Uruguay. *International Journal of Shipping and Transport Logistics*. 3 (4). pp. 475–93.

<sup>26</sup> The Shipping Corporation of India launched the India–Myanmar Container Service (Chennai–Krishnapatnam–Yangon–Colombo–Chennai) in October 2014. While the service was subsidized for the first 6 months, the Shipping Corporation of India's management realizes that the service is aimed at long-term market development and profits will not be forthcoming in the short term. In April 2015, a new coastal shipping service connecting Chittagong and Kolkata was launched by a private sector operator.

- sponsoring trial runs for such new services and routes jointly with private sector stakeholders, such as shipping companies and freight forwarders, to test their feasibility while also identifying potential bottlenecks;
  - holding focused stakeholder seminars to disseminate knowledge about the business opportunities available; and
  - funding a marketing campaign in conjunction with select private sector partners to sell such alternative solutions to the market.
- **Regulatory and institutional mechanism for the Bay of Bengal region maritime market.** Regulatory hurdles that prevent the development of a BBR maritime market must be addressed. Progress has already been made in the form of the India–Bangladesh agreement on coastal shipping, which addresses concerns related to bilateral certification of coastal ships and a bilateral understanding of insurance coverage for such vessels, as well as berthing and cabotage rights.<sup>27</sup> However, effective development of the BBR maritime market would require greater harmonization, mutual recognition of rules, and further liberalization. Key next steps include the following:
    - Using the framework of the India–Bangladesh and Bangladesh–Myanmar Coastal shipping agreements to develop a Bay of Bengal Coastal Shipping agreement that would include Thailand and Malaysia.
    - Complete liberalization of cabotage-related rules (i.e., removal of all flag and country of origin restrictions for operation of coastal vessels in short-sea shipping routes between Bay of Bengal ports in India, Bangladesh, Myanmar, Thailand, and Malaysia. Vested domestic interests in these countries would resist this. India needs to take the lead to convince regional partners of the welfare gains of such a policy reform given its long-term goal of developing an integrated BBR maritime market that helps the development of VCIC and ECEC.
    - India should actively negotiate with the Association of Southeast Asian Nations (ASEAN) for an India–ASEAN Maritime agreement with long-term goal of developing a single “Southern Asian Maritime Market” that would include ASEAN member states plus India, Bangladesh, and Sri Lanka. The agreement should be comprehensive in the sense that it addresses issues of cabotage rights, certification of vessels, preferential rates of tariffs, taxation and fees, seafarers’ rights, and insurance.

#### **G. Incentive Program for Developing a Hub Port in the East Coast Economic Corridor and Vizag–Chennai Industrial Corridor**

57. The development of a regional hub port in the Bay of Bengal for transshipment and cargo agglomeration can be facilitated through a well-planned incentive schemes. Examples of such incentives are listed below.

- The removal of customs and excise duties on bunker fuel could be made applicable to all vessels (irrespective of flag) serving routes that connect two VCIC ports, VCIC ports

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<sup>27</sup> The two countries have agreed to conform to Indian standards of river sea vessels (RSV)-4 for the operation of ships. India has agreed to assist Bangladesh through the Indian Register of Shipping for classification of Bangladeshi vessels. India and Bangladesh have agreed to buy insurance coverage up to a limit of \$10 million from their respective domestic insurance companies, which would meet insurance coverage compliance requirements in both countries.

with a foreign port, or use VCIC port for transshipment of international or domestic cargo.<sup>28</sup>

- A program of discounts on berth and port fees for providing a direct liner connection to hubs in priority markets in East Asia, the Middle East, Africa, and Europe can be developed. Similarly, a program for feeder route connectivity with major BBR ports in Southeast Asia could be developed.<sup>29</sup> Such incentives, in conjunction with infrastructure development and policies to facilitate greater agglomeration, would attract liner shippers and increase the number of routes and frequency of visits to hub port in ECEC and VCIC.

58. The two main transshipment points for the BBR, Singapore and Port Klang, are operating at 100% of their current capacity. These ports are also relatively more expensive compared with Chennai and Krishnapatnam in terms of terminal and handling charges (Table 2). These two factors create an opportunity to build better infrastructure, provide business incentives, and increase cargo agglomeration to develop a sustainable model for Krishnapatnam to compete with existing BBR hubs.

**Table 2: Relative Terminal Handling Charges in Key Asian Ports**

<b>Terminal Handling Charges</b>	<b>\$ per TEU</b>	<b>\$ per FEU</b>
Tokyo	380	490
Hong Kong, China	270	360
Singapore	200	250
Kaohsiung	190	285
Port Klang	95	140
Laem Chabang	90	140
Chennai and Krishnapatnam	70	130

FEU = forty-foot equivalent unit, TEU = twenty-foot equivalent unit.  
Sources: Asian Maritime Report; Indian Register of Shipping; and author feedback from industry representatives.

59. However, as mentioned earlier, developing a competitive regional hub would require major trade facilitation initiatives, the most critical of which would be the adoption of simplified transshipment procedures (Appendix 1).

60. In addition, all urban and industrial planning must be pursued in the context of a master plan that ensures that road linkages to arterial highways remain uncongested, given increased traffic arising from intracity vehicular movement, and that urban sprawl does not

<sup>28</sup> The Government of India has already provided an excise duty exemption for bunker fuel used in ships and vessels registered under the Merchant Shipping Act and transporting cargo between two or more Indian ports (Notification No. 21/2014–CE (Tariff) dated 11 November 2014). This exemption is only applicable to export and import cargo on Indian-flagged vessels.

<sup>29</sup> This is not a novel concept. In the early stages of the development of Port Klang, discounts of up to approximately \$9 (twenty-foot containers) and \$16 (forty-foot containers) were provided to liner shippers as an incentive to call on Port Klang and increase the number of direct services.

encroach upon road corridors. The responsibility for ensuring such planning lies squarely with the state governments.

#### IV. AIR CARGO

61. The most important aspects in the development of such policies are to create an enabling environment for the rollout of various types of air cargo solutions that generate volumes and to make a business case for investment by the private sector in developing facilities and new routes to serve global and regional trade routes. While governments sometimes get attracted to the idea of developing new airports or even stand-alone cargo airport facilities, these types of initiatives can be counterproductive.

62. The development of a successful air cargo logistics business requires multiple connectivity options to major regional and global markets, and access to key urban centers in the domestic market. Multiple options are essential for a business that is built on the need for minimizing the time of cargo in transit. This is the most important reason that stand-alone cargo hubs have mostly failed as a model globally.

63. Profitably running dedicated freighters in any trade route requires huge volumes. Thus, most airports cannot generate such volumes for more than a couple of trade routes at most. This is where commercial passenger airliners play a role by providing connectivity to many cities both domestically and internationally. Approximately 50%–70% of global air cargo volume is carried in the available belly-space of commercial airliners and not in dedicated cargo freighters.<sup>30</sup> Thus, a successful and sustainable air cargo business can only be developed out of an airport that has a substantive number of commercial airline connections serving key domestic, regional, and global routes. Stakeholder discussions between the air cargo industry and the Ministry of Civil Aviation on the failure of the Multimodal International Hub Airport at Nagpur have repeatedly made this point.<sup>31</sup>

64. Instead of trying to develop newer airports, a quicker and more cost-effective way would be to leverage a major airport in the ECEC and VCIC region and to undertake policy and infrastructure reforms from a cargo perspective. Some possible critical interventions in this regard are discussed below.

##### A. Improving Road Access to Airports and Dealing with Urban Congestion

65. The primary candidate for the development of a major air cargo hub in the ECEC and VCIC region is Chennai. It already has a critical mass of flight connections to the rest of India and internationally to Southeast Asian hubs such as Bangkok, Kuala Lumpur, and Singapore;

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<sup>30</sup> In addition, as Middle Eastern and East Asian low-cost passenger airlines increase the supply of available belly-space, scheduled full-freighter operations are facing an increasingly competitive market in terms of pricing, which in many cases is leading to a reduction in full-freighter operations. This is especially true of large global airlines that operate both passenger and full-freighter services such as Emirates, KLM–Air France, and Lufthansa.

<sup>31</sup> Industry stakeholders, including cargo airlines, have repeatedly made the point that stand-alone cargo airports represent the mature stage of air cargo development, not the model for greenfield development. Given its status as a relative economic and tourist backwater, Nagpur lacks commercial airline connections with international and domestic locations. Thus, even if policies and incentives did attract a few all-cargo airliners to use Nagpur, they would be hard-pressed to find onward air evacuation to the rest of India given that Blue Dart Aviation is the only all-cargo airline currently operating in India.

the Middle East; Europe; and East Asia. Chennai remains the third-most important aviation market in southern India despite competition from Bangalore and Hyderabad. Chennai also offers full-freighter services from major airlines such as Emirates Sky Cargo, Korean Air Cargo, KLM–Air France, and UPS, thereby linking it to major aviation hubs in Europe, the Middle East, and East Asia. Chennai is also the main hub for Blue Dart Aviation, India's only all-cargo airline.

66. The city-side approach to the Chennai Air Cargo complex is extremely congested. The airport's location within what has become the central urban sprawl of Chennai makes the development of additional infrastructure close to or next to the airport extremely cumbersome. The arterial roads leading out of Chennai to major national and state highways and to Chennai port are also congested at most times of the day. The Chennai High Speed Circular Transportation Corridors project should include a seamless connection through a dedicated bypass for cargo-carrying vehicles linking the cargo complex in the city to the Chennai High Speed Circular Transportation Corridors and the Chennai bypass. The development of the elevated motorway between Sriperembudur and Chennai port will also provide a boost to sea–air businesses.

## **B. Attracting More Services to Southeast Asia, East Asia, and the Middle East**

67. Increasing the number of services to Southeast Asia and East Asia, as well as adding a few more connections to Europe, would greatly increase the attractiveness of Chennai as a cargo hub. This would not be difficult since Chennai's diaspora linkages with Southeast Asia and growing automobile sector linkages with East Asia provide a business case for increasing flights. Many low-cost airlines in Southeast Asia and East Asia are looking at India-centric operations. Chennai could easily attract these services by developing an incentive regime (e.g., reduced fees) linked to the frequency of new direct connections.

68. However, Chennai International Airport, which is managed by the Airport Authority of India, is considered one of the worst airports in India and all of Asia.<sup>32</sup> Such poor facilities have pushed operators such as Air Asia to shift their southern India business from Chennai to Bangalore. With an improvement of infrastructure and a reduction in transit time between Bangalore and the industrial clusters in Tamil Nadu, the better services and infrastructure of the much more spacious Bangalore air cargo complex could lead to a shift of traffic away from Chennai air cargo to Bangalore. The improvement of airport quality and overall passenger experience is critical to Chennai's sustained relevance as the main air hub for southern India.

## **C. Improving Domestic Connectivity (Chennai as southern India's air hub)**

69. Chennai is already the best-connected airport in southern India in terms of domestic destinations. However, it has faced stiff competition from airports in Hyderabad and Bangalore in recent years. It could work strategically with low-cost airlines to develop more frequent connections to some of the newer regional airports that are increasing in importance given their strategic locations in industrial growth areas. Examples of such airports include Amritsar, Pune, Indore, Patna, Jaipur, Bhopal, and Bhubaneswar, as well as the smaller regional airports in Andhra Pradesh. This would require a well-developed business plan that focuses on long-term development by leveraging connectivity with second-tier airports in industrial hubs rather than focusing on near-term revenue

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<sup>32</sup> S. Sekar. 2014. Chennai Is on Asia's "Worst Airports" list, Yet Again. *The Hindu*. 22 October. <http://www.thehindu.com/news/cities/chennai/chen-society/chennai-is-on-asias-worst-airports-list-yet-again/article6524375.ece>



maximization. A key intervention in this regard would be to consider reduced landing charges for flights that connect Chennai directly with second-tier airports.

#### **D. Addressing Transshipment and Other Regulatory Issues**

70. Cargo agglomeration and the development of a hub will require addressing issues related to transshipment. Appendix 1 discusses transshipment procedures at Indian airports, which must be significantly reformed to help the formation of regional hubs in India.

#### **E. Improving Cargo Terminal Management**

71. To emerge as a competitive air cargo hub, several critical aspects of logistics infrastructure need to be addressed in the short term:

- automation of gating and parking procedures,
- number of truck bays designed to handle peak hour traffic to minimize waiting times for trucks waiting to load and unload,
- special zones for bonded trucks to load and unload, and
- development of a dedicated express terminal (with space for the large international and domestic express companies to run their own dedicated operations with both air-side and city-side access).

72. In addition, Chennai airport would require some of the following interventions to make itself attractive as a cargo hub:

- make cargo terminal operators and airport operator accountable to well-defined, service-level agreements on the efficiency and quality of terminal operations;
- reduce landing charges for cargo freighters;
- ensure terminal, storage, and processing charges are competitive in relation to other regional options;
- have cargo parking bays for aircraft in a cluster (next to each other) to minimize turnaround time, and allow efficient aircraft-to-aircraft cargo;
- give cargo flights at least the same priority as passenger flights, given that air traffic delays have a greater cost impact on cargo flights, possibly through better management in the short term and the expansion of infrastructure in the long term.

#### **F. Development of an Air Freight Station and A Free Zone in the Vicinity of the Airport**

73. In the short term, airports like the Chennai airport that face space constraints can utilize the Air Freight Station (AFS) policy, announced in October 2014, to develop additional facilities for processing cargo. However, for the AFS policy to succeed, airport operators and cargo terminal operators need to consider it as a capacity augments and not a competitor for the same revenue.

74. Critical elements that need to be integrated into the development of the AFS concept include the following.<sup>33</sup>

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<sup>33</sup> This assessment is based on feedback from the Indian Merchants Chamber.

- There should be unhindered road access for bonded trucks moving from the AFS to the airport cargo complex.
- Charges should be rationalized:
  - Terminal operators charge full terminal, storage, and processing charges even though storage and processing is done at the AFS and terminals only provide land-side to air-side movement and, in some cases, ground-handling services. Cargo terminal operators cannot charge full terminal, storage, and processing charges on cargo already delivered as a unit load device (cargo that has already been processed and made ready for upliftment).
  - There should not be any levy on bonded trucks.
- Cargo terminal operators should ensure the access of essential personnel of the AFS and bonded truck operators to the cargo complex. An integrated security control and access protocol can be developed in consultation with the relevant government agency (Bureau of Civil Aviation Security).
- The nonavailability of customs officers and customs cost recovery adds a layer of transaction costs and delays for AFS operations. Without adequate deployment of customs officials, clearance procedures at the AFS will suffer. Ensuring the presence of customs officers at the AFS is a critical facilitator and the government needs to consider this seriously.
- The transshipment procedure at air cargo terminals is inefficient (Appendix 1). There is no transshipment approval prior to actual arrival of the flight at the airport and there is often duplication of customs verification and inspection, even for a full unit load device (equivalent of a full container used for maritime cargo movement).

## V. LAND BORDER AND TRANSIT REFORMS

75. Poor infrastructure, relatively inefficient customs procedures, and protected road freight markets that prevent vehicles from entering the territory of another country are impairing the growth of overland trade in South Asia, which, in turn, impedes the development of the logistics sector that serves this trade. A vibrant overland trade option will have a multiplier effect on the growth of trade opportunities as well as the development of logistics services, including exports. For example, a border that allows trucks (or at least containers) of other countries to cross, facilitated by efficient customs and a common trucking bay area, would allow a road–air product out of India to serve Bangladesh’s market. Bangladesh’s outbound cargo could come to Kolkata airport for evacuation to other Indian or European destinations.

76. A fully integrated rail–road product can run between India, Myanmar, and Thailand, using Bangkok as a hub for distribution to Cambodia, the Lao People’s Democratic Republic, and Viet Nam. But this also requires improving cross-border procedures at land border crossings and the liberalization of truck freight movement across borders through transit and motor vehicles agreements.

77. The inability of trucks and trailers to cross borders presents major challenges since it results in the need for transshipment between trucks and trailers at the border, adding an extra layer of costs. Furthermore, it also means that customs procedures must be handled at the international border and provisions for customs clearance at preferred locations inland (or directly at ports and airports for the first leg of multimodal shipments) cannot be developed and implemented. The Bangladesh–Bhutan–

India–Nepal Motor Vehicles Agreement (BBIN MVA), ratified in June 2015, is a first step toward addressing these challenges.

78. However, BBIN MVA and other such expected agreements (e.g., a motor vehicles agreement covering India, Myanmar, and Thailand) can be better designed to reduce operational challenges for cross-border road freight. An essential first step is to involve private sector stakeholders from the logistics sector in consultations over the negotiations of these agreements. A two-pronged approach that addresses operational issues in bilateral motor vehicles agreements and trade facilitation issues, with respect to customs and other at-the-border regulatory clearances, needs to be adopted. A detailed discussion of both aspects of this approach follows.

#### **A. Issues Related to Standard Bilateral (or Regional) Motor Vehicles Agreements**

79. A key problem with most standard bilateral motor vehicles agreements in Asia is that getting a permit for the vehicle to operate across borders requires the identification of the designated operator (driver) for the entire journey.

80. There should also be flexibility in changing drivers at the border. For example, it might make more sense for a truck to be driven by an Indian driver on the Indian leg of the journey and a Bangladeshi driver on the Bangladeshi leg of the journey, given issues such as language and familiarity with routes, rules, and regulations. By requiring the identification of the designated operator of a specific vehicle in the permit form for trucks, thereby implying that only a single operator can drive a specific truck, this flexibility is lost.

81. Operational flexibility should also exist for tractor trailer models. (A detailed discussion of India's domestic motor vehicle regulations for such models is included in Appendix 2). For example, the operators might want to use an Indian tractor up to the border and then a Bangladeshi tractor to operate the container trailers during the Bangladeshi part of the journey. This would mean that a facility for approving trailers for cross-border movement—covering adequate registration, insurance, roadworthiness, and safety issues pertinent to specific trailers—would need to be present in the agreement.

82. Based on those two observations, it is suggested that trucks traveling across borders, tractors traveling across borders (in cases where the tractor and trailer are separable), and drivers traveling and operating across borders all be approved separately. An agreement must include specific norms for getting such approvals. Any combination of these elements, if they have been individually approved, should not have any barriers to cross-border operations. Instead of requiring frequent reapplication and reapproval, such approvals should be valid for at least 2 years.<sup>34</sup> Of course, countries could reserve the right to rescind permits during the 2-year period in the event of wrongdoing or noncompliance.

83. Another challenge with Asian bilateral motor vehicles agreements is that they leave the requirement for having a global positioning system (GPS) for trucks with designated control towers of individual governments. This should typically be a data-sharing arrangement between a government agency and private operators in which private operators are required to transmit their real-time vehicle positions via GPS. There is also not a deadline to consider the implementation of such a system as a prerequisite for operating cross-border. Instead, reliance is made on identifying designated routes that

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<sup>34</sup> The BBIN MVA is the first such cross-border protocol being developed. The periodicity of approvals is yet to be notified.

cross-border trucks can utilize and penalties are imposed for any route deviations. Many operational and business reasons can necessitate route deviation. Getting approval for every minor change in route to meet business, safety, or emergency needs can become an operational hassle. It can also lead to rent-seeking and nontransparent practices. Reliance on a GPS tracking system, on the other hand, ensures that cross-border trucks remain largely compliant with their declared routes and stated destinations, while not making unscheduled and/or suspicious stops, and are being largely compliant by not engaging in any domestic movements of cargo.

## **B. Specific Suggestions for Customs Facilitation and Inspection Regimes for a Smart Corridor**

84. Some of the specific suggestions on procedural improvements at land border crossings, including inspections (of vehicles), customs procedures, and the liberalization of truck movement across borders (motor vehicles agreement and transit agreement topics) are as follows:

- allow custom-sealed container trucks to cross borders without physical inspection (bilateral agreement between customs administrations to acknowledge each other's customs-sealing processes);
- risk management systems (RMS) to be developed that allow random checking of sealed trucks, with not more than 10% of the total number of trucks to be selected under an RMS;
- an electronic data exchange between customs agencies, including digital signatures, to ensure that trucks and vehicles are not held due to documentation issues;
- protocols on seamless movement (without physical inspection at every border point) and associated RMS, and an electronic data interchange (EDI) to ensure that trucks do not need more than 10 minutes to cross a border;
- physical checks only at the point of last destination (e.g., physical examination of Indian cargo bound for Cambodia should be undertaken by Cambodian customs; Myanmar and Thailand (transit countries) should allow the truck to pass upon checking that seals are intact and EDI-transmitted documents from Indian customs are in order).
- trucks are to be GPS-enabled with regulators having access to GPS control tower data to address tampering of cargo en route; trucks should also have CCTV in containers that provides footage every time a truck stops for more than 3 minutes to ensure cargo inside is not contaminated en route;
- special visa for truck drivers allowing them to cross borders; and
- common land-border stations to evolve over time with customs from both sides of the border present under one roof at an integrated border customs station to remove all duplication (common inspection to reduce transit time and for containers to change their tractors in cases when trucks themselves are not allowed to cross).

## **VI. ENABLING LOGISTICS EFFICIENCY**

85. Enabling logistics efficiency and investment requires regulatory simplification and facilitation across several specific areas of operations, including transport. These reforms touch central government legislation and procedures as well as state-level regulation and enforcement.

86. If one conceives of the entirety of a production network operating in India, it would involve logistical solutions and connectivity within India as well as integration with production nodes across the border. Therefore, critical solutions in terms of regulatory reform lie at the international border and involve customs and other agencies responsible for the international movement of goods. Solutions would also entail regulatory reform for the movement of goods within India across state borders, a process which is extremely cumbersome currently but is slated for major reform due to the implementation of the Goods and Services Tax (GST) in April 2017. Better management of state borders and interventions in trade facilitation at the border are explained in detail in Appendixes 2 and 3, respectively.

87. In addition to cross-border and domestic trade facilitation, there are some broad areas where modern logistical solutions can be applied in India but this is being prevented by poor regulations and a business environment that is wanting. Central and state laws, and the quality of their enforcement, are largely responsible. One such solution lies in the concept of FTWZs. In this section, a discussion of the FTWZ model and related regulatory issues is presented as an example of how some of the more useful logistics-related concepts face implementation hurdles in India.

#### **A. Vendor-Managed Inventory and Supplier-Managed Inventory Models, and the Role of Free Trade and Warehousing Zones**

88. The vendor-managed inventory (VMI) and supplier-managed inventory (SMI) model has emerged as a critical concept in supply chain management that supports global production networks. It allows the consolidation of material from various supplier sources and their distribution by leveraging the lowest-cost location for such consolidation while ensuring that the time to (or from) markets remains the shortest possible.

89. Using the VMI–SMI concept, an international supplier holds inventory in India in an FTWZ for the delivery of goods to buyers globally, including in India. The international supplier brings such goods to the FTWZ where they are held on an international supplier’s account in the FTWZ. The FTWZ not only acts as a storage space, but also provides value-added services such as labeling and packing, including special packaging for different markets that are needed to meet compliance (e.g., mutual recognition procedure labels for different countries, labels in different languages, special safety symbols, environmental or energy usage required markings, or the insertion of user manuals in different languages). In many cases, some basic manufacturing or assembly activities, which are an extension of the packaging function, are also carried out.

90. Depending on demand in different markets, the international supplier sells the goods in different geographies. Essentially, the FTWZ in India serves as the international supplier’s fulfillment center. Locations such as Dubai; Hong Kong, China; Singapore; and (increasingly) Viet Nam have developed such logistics services offerings. Given that India itself is such a large consumer market and the relative low cost of labor and warehousing services in India, it has the potential to emerge as a regional and even global hub for VMI–SMI activities.

91. ECEC in general and a logistical hub centered on Krishnapatnam–Chennai and adjoining areas in particular can emerge as a major center for such activities serving South Asian, Southeast Asian, and Middle Eastern markets. This would mean foreign exchange income for exporters of such logistical services that are currently being effectively imported into India. Equally important, the consolidation of regional and global inventories in India would increase the demand for air and/or sea connections from

92. Indian hubs to regional and global locations, strengthening the business case for Indian ports and airports such as Chennai and Krishnapatnam to attract more direct services.

93. Not only does creating an enabling environment for the VMI–SMI model help earn foreign exchange through the export of Indian logistics services and create conditions for the accumulation of trade volumes in India, thereby strengthening the business case for increased investment in air and sea connectivity with Indian hubs, it also directly helps reduce the cost of Indian participation in global supply chains.

94. Large multinational corporations that supply manufacturers with critical parts and components would be able to create a regional inventory center that allows them to supply factories in the shortest possible time to prevent disruptions in production. An optimal way to do this would be to hold inventory in an FTWZ in India. This would lead to three operational advantages: (i) reduce the time, cost, and procedural hassle of supplying Indian factories; (ii) retain the flexibility of supplying other countries in the region using the Indian FTWZ; and (iii) given that operational costs are lower in India than in most supplier markets, reduce the absolute cost of holding inventory.

95. Such an operation would greatly facilitate and reduce the transaction costs of Indian manufacturers participating in global supply chains. For example, Indian manufacturers of high-end medical equipment could easily procure the special digital scanners required in such equipment from a Japanese firm with inventory being held in an Indian FTWZ. Otherwise, the same devices would have to be imported periodically, increasing the cost and time to bring the final product to market as well as adding a measure of uncertainty. Since India can be an inventory center for regional (or even global operations), the positive cost implications of economies of scale would be felt most directly by Indian procurers.

96. The overseas buyer consolidation (OBC) model has emerged as another critical element of global supply chain management. This model reduces the cost to market for global procurers by consolidating purchases in a particular location. As an illustrative example, assume that Walmart wants to procure plastic cutlery from various suppliers in India. Using the OBC model, it would procure from Indian suppliers and keep the inventory at an Indian FTWZ. Depending on festival-based demand spikes in different markets in Europe, Latin America, the Middle East, and the United States, it could supply stores in these markets from the Indian FTWZ-based inventory. This would reduce the cost of holding inventory in comparison to a more expensive operational setting in Europe, Latin America, the Middle East, or the United States.

97. Using an FTWZ for OBC ensures that Walmart has already procured and effectively taken care of the required border procedures for exports from India (since they are using an FTWZ), thereby reducing time and cost to market. This model works only when Indian exporters can directly export their goods to an FTWZ in the name of their global procurer (e.g., Walmart) and the FTWZ unit holds this inventory in the name of the global procurer. Like in the case of VMI–SMI models, the OBC model also can include various value-added logistics services such as packing, labeling, and even compliance-related activities (certification, testing, quality management of inventory).

98. It is easy to see that if exports from each individual consignee (e.g., different manufacturers of plastic cutlery) are to move as individual shipments, there would be significant transaction costs, including the additional costs of shipping and handling, and customs clearance, among others. It would also increase time to market and decrease the flexibility of optimal inventory and procurement management. The availability of such services greatly enhances the competitiveness of Indian

exporters, thereby helping initiatives such as “Make in India.” Currently, these exports from India occur as individual shipments that are later consolidated at free trade zones overseas, which means Indian logistics services firms lose out on export income while Indian exporters take on additional transaction costs.

99. The FTWZ concept is intrinsic to operationalizing such models in India. However, there are several policy challenges that are preventing optimal FTWZ business operations in India. A detailed discussion of these policy challenges follows.

1. Customs and duties and the tax structure prevent the use of VMI in Indian production networks. There needs to be greater clarity in supplying Domestic Tariff Area (DTA) units from an FTWZ since such supplies are treated as imports and charged sales tax or value-added tax (VAT) in addition to all duties at the border, including an additional customs duty. This essentially makes supplying from an India-based FTWZ much less cost-effective than a location in Thailand or Sri Lanka since imports from these countries are not subject to a sales tax or VAT. Additionally, with the proliferation of free trade agreements, the duties paid for supplying a DTA from an FTWZ would be higher relative to the preferential rates applicable to partner countries. For example, if a foreign firm (A) holding goods at a Singapore free trade zone supplies goods to an Indian firm (B), which is a DTA entity, these goods are cleared from a customs port or airport after payment of applicable customs duty, but there is no incidence of a VAT in this transaction. In the same transaction in which firm A uses an Indian FTWZ to hold and deliver goods to firm B, it is perceived by state authorities as a taxable event with a requirement to pay VAT or central sales tax (CST).

**Solution:** *The Government of India should issue a circular to state governments that goods stocked at an FTWZ and then sold are considered imports given that an FTWZ is a customs port as per section 53 of the SEZ Act and therefore not liable to pay CST or VAT, but rather only the applicable customs duty at the point of clearance (when entering a DTA from an FTWZ). With GST in effect from April 2017, this provision should extend to the central and state components of GST as well.*

2. A service tax is levied on all services provided to overseas suppliers from the FTWZ even when these services are wholly provided and consumed in the FTWZ (e.g., warehousing services). This defeats the purpose of having a “free zone” and makes Indian FTWZs far less competitive relative to other locations.

**Solution:** *There should be no incidence of service tax on any value-added logistics services provided within an FTWZ. This needs to be clarified within the ambit of the proposed GST.*

3. Rule 18(5) of the SEZ Rules does not provide for a unit to hold goods on account of an overseas buyer. Using the example given, an Indian FTWZ would not be able to hold goods on account of Walmart.

**Solution:** *Instruction 60 issued by the Ministry of Commerce provides that an FTWZ could hold goods on account of a foreign buyer. This instruction needs to be incorporated in SEZ Rule 18(5).*

4. Per Rule 30(8) of the SEZ Rules, “Drawback or Duty Entitlement Pass Book credit against supply of goods by [a DTA] supplier shall be admissible provided payments for the supply are made from the Foreign Currency Account of the Unit.” This means that the transaction must be between the SEZ or FTWZ unit operator and the Indian exporter in a DTA. Thus, third-party payment (e.g., payment made directly by Walmart to an Indian exporter) does not qualify for claiming drawback or duty entitlement pass book credit. This prevents the establishment of the VMI-based procurement model in India.

**Solution:** *Allow third-party payments (payments between buyers abroad and suppliers in India) to qualify for drawback or duty entitlement pass book credit without the FTWZ operator being involved since the FTWZ operator is providing input services (e.g., warehousing, inventory management, and other allied services) and is not directly involved in this transaction. Recognize the FTWZ in this context as a special type of operation, and generic SEZ Rules such as 30(8) should not be applicable to FTWZs.*

5. Rule 30(5) states that “where a Bill of Export has been filed under a claim of Drawback or Duty Entitlement Pass Book, the Unit or Developer shall claim the same from the Specified Officer and jurisdictional Development Commissioner respectively and in case the Unit or Developer does not intend to claim entitlement of drawback or Duty Entitlement Passbook Scheme, a disclaimer to this effect shall be given to the Domestic Tariff Area supplier for claiming such benefits. Provided that the Duty Entitlement Passbook Scheme may be claimed by Domestic Tariff Area supplier from the Development Commissioner or their jurisdictional Regional Licensing Authority of the Directorate General of Foreign Trade.” While the process described seems to be transparent enough, the actual practice is that once the FTWZ operator has endorsed the claim to the DTA supplier, the DTA supplier must go to the circle excise officer to make the claim. This process is unduly long and often leads to replication of various checks and procedures that had already been duly conducted by the development commissioner.

**Solution:** *Allow the development commissioner’s order on releasing the claimed benefits to be adequate proof of due process without the need for any further processing either from the regional licensing authority of the Directorate General of Foreign Trade or the circle excise officer.*

6. A state VAT authority requires Form I from DTA exporters as per provisions of SEZ Rule 32. Form I can be issued by a registered dealer under the CST and VAT Acts only.

**Solution:** *The Form I requirement needs to be dispensed with as the goods are not entering an FTWZ for consumption by the FTWZ unit but solely for export. The FTWZ unit is only acting as a custodian service provider to the overseas buyer, who may not be registered under CST or VAT. If all foreign buyers are required to make such a registration across several Indian states, this will only add to transaction costs. States need to understand the business and in consultation with the Ministry of Commerce issue a clarification in this regard that FTWZs can be made exempt from the Form I requirement. Under the GST regime, foreign buyers who do not have a commercial presence in India should not be required to register for GST.*



7. Export entitlements can only be claimed once the shipping bill has been formally filed at the customs port, not when the bill of export is filed when goods enter an FTWZ. This means that exporters, especially small and medium-sized enterprises, would be disadvantaged in not being able to get their export incentives when such sales are made, instead having to wait until inventory is physically cleared from India. Therefore, a model that agglomerates inventory in India for global supplies will work against Indian small and medium-sized enterprises if this issue is not addressed.

**Solution:** *Goods moved under the cover of the document allowing the removal of excisable goods (ARE1) should be processed along with the bill of export where export entitlements may be claimed. Clarification and/or instructions are required to provide for such transactions when goods entering an FTWZ shall be treated as exports, per the definition of an export under SEZ Act, since these goods are eventually meant for export from India or for the transfer of ownership to overseas buyer within the FTWZ. If such goods are cleared back into a DTA, the same would be treated as reimported goods as provided for in SEZ Rule 48(3).*

## VII. CONCLUSION

100. The ECEC is an example of an integrated economic development initiative centered on port-based industrial development along India's eastern coast. The successful implementation of ECEC requires infrastructure development and regulatory reforms that facilitate increased connectivity. This paper has focused on the microlevel regulatory reforms needed to address obstacles to expanded connectivity and greater investment in logistics services. Issues of multijurisdictional coordination and the rules that govern logistics operations were also addressed.

101. Specific proposals include policies that support the development of (i) a major hub port on the eastern coast of India to serve as a node for cargo agglomeration to connect ECEC with the wider Bay of Bengal region and beyond; and (ii) a major air cargo hub at Chennai, which will require improved road access, more air services, and strengthened transshipment and cargo terminal management. In addition, improved infrastructure, streamlined customs procedures, and the removal of protective measures in road freight markets would ease constraints to growth in overland trade in South Asia. As the application of modern logistical solutions in India is hampered by counterproductive regulations, we also propose the FTWZ model as a solution for creating a more conducive business environment by establishing integrated zones to function as international trading hubs.

## APPENDIX 1: TRANSSHIPMENT POLICES IN INDIA AND SUGGESTED REFORMS

### A. Transshipment at Ports

There are three primary types of transshipment per Indian customs definitions. These three transshipment types are as follows:

1. movement of import cargo from a gateway port to a hinterland station such as an Inland Container Depot, Container Freight Station, or another port or airport;
2. movement of export cargo from a hinterland station (Inland Container Depot, Container Freight Station) to a gateway port; and
3. international transshipment (i.e., movement of cargo from a foreign port to another foreign port through a port in India).

In our discussion of developing a transshipment hub, we are primarily concerned with type 3 (international) and to a lesser extent with types 1 and 2 (domestic transshipment involving coastal movement). Air-cargo-related specifics are dealt with separately. In the discussion that follows, types 1 and 2 are discussed briefly to highlight some of the regulatory and operational challenges in the current process, especially in the context of coastal cargo agglomeration. The regulatory and operational challenges related to the current procedures in place for type 3 (international) are discussed in the context of best practices followed in the most successful transshipment port in the Bay of Bengal region (Port Klang).

#### 1. Transshipment of imported cargo to the hinterland

Allowing customs clearance at a place other than at the gateway port (i.e., allowing transshipment from a gateway port to the hinterland for final customs clearance at a hinterland station) facilitates trade by allowing customs clearance at a place of their choice in India. Most Indian ports suffer from congestion and infrastructure issues that prevent on-the-dock clearance or the development of clearance facilities within port premises. In fact, this type of transshipment is most frequently used for transferring cargo to a Container Freight Station located very close to the gateway port which serves as a location for segregation and repacking of shipments and customs clearance for further movement into the hinterland. The key challenges in the current process are explained below:

- While application for transshipment is allowed prior to arrival of a vessel (the current submanifest transshipment permit allows simultaneous application for transshipment at the time of filing for Import General Manifest), the actual permission for transshipment is only given when the vessel arrives at port. This adds to delays and uncertainty.
  - Solution: The best practice globally (in cases of full container load) is to give prior permission for all identified (by container number) containers so they can be unloaded and moved out of port without any delay.
- A separate bond for transshipment must be maintained. This adds to transaction costs.
  - Solution: Customs can move to a single bond for larger, organized players with a proven track record.
- While self-sealing of containers is allowed (customs will not insist on sealing containers), there are challenges on the ground, with officers insisting on checking all seals and verifying numbers. This adds to delays. It also adds a layer of discretion by making officers available for physical verification and less-than-transparent practices.

- Solution: Like in the case of factory self-sealing, there should be no need for verification. Customs at the hinterland port will check if seals have been tampered with. If there is concern that seals will be tampered with en route, checking at the port does not serve as a preventive measure in any case. For large freight forwarders and manufacturers, a facility for at-premises clearance of import cargo in the presence of excise officers can be initiated.
- Containers need to be painted as domestic and international. This restricts operational flexibility.
  - Solution: There is urgent need for implementing an electronic identifier system for containers that tracks the movement of containers into and outside of India; this will be a better check against misuse of temporary permission for entry of containers into India. Over the long term, restriction on container movement, as a concept itself, needs to be revisited.

### **Specific Challenges for Coastal Cargo and Less-than-Container Load**

- Vessel-to-vessel direct loading of cargo (for coastal) is not available in most ports. This is because schedules of arrivals of ships and availability of coastal vessels do not always match (for obvious operational reasons). Given the lack of space and congestion at ports and the lack of modern facilities, goods must be removed to a nearby Container Freight Station and then reloaded as customs-cleared cargo (i.e., domestic cargo movement).
- Given this lack of infrastructure, direct transshipment facility is available only to full container load. Less-than-container (LCL) multidestination cargo must clear customs at a nearby container freight station. This also restricts direct loading of cargo from vessel to vessel (in case of coastal).
  - Solution: Creation of facility for desegregation of LCL transshipment cargo within the port premises itself. This facility would allow segregation, repacking, and reloading onto coastal vessels or trucks, and onward movement. Physical intervention and inspection in this process by customs could be reduced by use of CCTV cameras and developing a risk management system (peculiar to port and facility layout) that focuses on sanitizing entry and exit into the facility using technology such as automated truck container scanners and an electronic container identifier (bar code).

## **2. Transshipment of export cargo to gateway port**

This is a standard global practice that allows facilitation to an exporter for clearance closer to an exporter's premises and the agglomeration of precleared cargo at gateway port.

- The current process in India has certain challenges. The documentation process for this transshipment requires the submission and endorsement of several physical copies of documents (e.g., shipping bill customs-endorsed copy, six copies of ARE1, and GR form, among others) and their carriage to the gateway port.
  - Solution: The entire process needs to be made through an electronic data interchange (EDI). This will reduce delays and make the process more seamless (doing away with cumbersome documentation checks at both ends of

transshipment). With customs accepting digital copies of shipping bills and bills of lading, this is a logical next step.

### Specific Challenges for Coastal Cargo

- Like in the case for import transshipment, the lack of infrastructure in the port means that for coastal cargo, vessel-to-vessel transshipment is often not possible. This necessitates movement of export containers to a secure location (often outside the port) under customs escort (sometimes requiring movement under bond, depending on local conditions and solutions available). There is also reentry into port and loading onto ship under customs escort and supervision. This adds significant transaction costs.
  - Solution: Creation of a facility for desegregation of LCL transshipment cargo within the port premises itself. This facility would allow segregation, repacking, and reloading onto coastal vessels or trucks, and onward movement. Physical intervention and inspection in this process by customs could be reduced by using CCTV cameras and developing a risk management system (peculiar to port and facility layout) that focuses on sanitizing entry and exit into the facility using technology such as automated truck container scanners and an electronic container identifier (bar code).

### 3. Transshipment of International Cargo

Table A1 provides a step-by-step comparison of the procedures for international transshipment at Port Klang and mandated procedures in Indian ports.

The differences in the Indian system versus that in place at Port Klang highlights the following issues:

- The Indian system is overly dependent on manual procedures and actual physical presence and verification of customs officers during process of transshipment.
- The infrastructure deficit leads to challenges in effective vessel-to-vessel direct loading.
- The infrastructure and technology deficits pertinent to security (e.g., lack of automation and use of technology such as advanced truck scanners, electronic container identifiers, advanced sealing systems for containers, and secure transit route between warehouse and terminal manned by CCTVs) drives this need for customs manual supervision and inspection at every stage. There are legitimate concerns that facilitation along the lines of Port Klang would lead to misuse by unscrupulous elements.
- However, overdependence on manual systems rather than an RMS-centric electronic environment backed by technology-enabled security infrastructure and secure access transit between facilities can and does backfire due to connivance between unscrupulous elements.

**Table A1: Transshipment Process Comparison: India vs. Port Klang**

<b>Indian system for FCL cargo</b>	<b>Port Klang System for FCL cargo</b>
Manual application for transshipment permission with supporting documents (manual application creates a source of discretionary decision making, could be a cause of delays and other issues)	Electronic submission of customs document (Manifest) online, prior to arrival of first vessel. Simultaneous submission of transshipment permission declaration to Free Zone Authority (FZA) that administers Port Klang
Unloading can only take place after permission for transshipment has been granted	Permission for transshipment is automatically generated according to the risk management system. Customs and FZA systems are aligned, so customs document approval is directly transmitted to FZA system. Electronic approval for transshipment is provided to terminal operator prior to arrival of vessels.
Checking of unloaded containers	No such checks are required.
Loading of containers for onward journey under customs supervision. The Preventive Officer supervising the loading is to acknowledge loading of such cargo.	No customs supervision required for vessel to vessel movement. No acknowledgment and endorsement of physical document is required.
Need for record reconciliation with customs based on the endorsement made by a preventive officer	There is no need to “close.” Loading of containers on second vessel completes the process. Terminal operator acknowledges loading of transshipment vessels online to FZA.
Infrastructure in Indian ports, and requirement for customs supervision means that if there is a longer wait period between unloading from inbound vessel and loading on outbound vessel, containers would have to be moved (under customs supervision) to secure location. This would necessitate the filing of domestic transshipment permit and reexport (EGM). This process is de facto applied to LCL international transshipment cargo (critical business) in any case (see discussion below).	Since port is considered a secure free zone with restricted access, containers can wait at terminal operator warehouse (adequate infrastructure available) without any need for customs physical verification, except on specific intelligence. CCTV cameras and standard security measures are deemed adequate for ensuring that container contents would not be compromised.
<b>Indian system for LCL cargo</b>	<b>Port Klang system for LCL cargo</b>
Online filing of Import General Manifest	Online filing of Import General Manifest with customs and filing of ZB1 (import) form with FZA
Unloading can only take place after permission for transshipment has been granted.	Permission is automatically granted online.
Unloading to take place under customs supervision	Unloading of containers. Customs supervision only on specific intelligence
The containers would be taken to approved place or premises under customs escort. Custodian of such premises would provide a segregated secure space for transshipment containers.	Movement to warehouse within free zone does not require customs escort.
Destuffing of containers, movement of shipments within warehouse of custodian, and restuffing of containers; all activities require customs supervision.	No such requirement.
Filing of EGM online. Further checks based on risk management system (RMS).	Filing of EGM and customs declaration and ZB1 (reexport) online. Further checks based on RMS.
Loading onto vessel under customs supervision in specific cases	No such requirement.

Source: Author's compilation.

**Recommendation:** The Government of India, in consultation with terminal and port operators, state governments, and customs officials should develop two global transshipment hubs drawing from the best practices available at a major transshipment hub in a comparable environment such as Port Klang in Malaysia. The specific roles for stakeholders would be as follows:

- **Terminal operator and landlord port.** Develop infrastructure to develop transshipment warehouse that would be secure access and CCTV-enabled.
- **State governments.** Develop a secure-access road corridor between the Container Freight Station and terminal for drayage. The road should be CCTV-enabled with a security control tower supported by the port operator.
- **Customs.** Adopt an integrated approach similar to the one discussed for Port Klang. This would require integration of the systems of the port operator, terminal operator, warehouse operator, and customs officials. A simple information technology architecture built on message exchange would not be prohibitively expensive. Procedure flow would eliminate physical submission and endorsement requirements of documents. It would also restrict the need for inspection or supervision by customs to a minimum, preferably based on specific intelligence.

## A. Transshipment at Airports

Issue 1: There are different practices followed in each airport for transshipment with respect to the requirement for bond and escort for transshipment. The standard systems detailed below should be adopted.

*Solutions:*

- If transshipment movement is through a sterile area, then no bond or escort should be required.
- If transshipment is through a nonsterile area (movement by road to another airport in India or between cargo and express terminals that cannot be connected by sterile area), then the requirement for separate bond and escort should be dispensed with if movement is happening through a customs-bonded truck. If movement is happening through a nonbonded truck, then a customs seal and bond should be the only requirements, and there should not be any requirement for customs escort as making an officer available can often result in huge delays.
- If transshipment is through air (e.g., Hong Kong, China to Delhi or from Delhi to Chennai), then there should be no requirement for a bond since there is no possibility of cargo contamination when traveling through air since cargo is never exposed to a non-notified (nonsterile) area.
- Currently, there is no specific transshipment solution available where there is no direct flight and no option for shipment traveling on a multiple destination flight (e.g., inward from Singapore to Mumbai, and onward to Guwahati via Kolkata). This needs to be rectified.

Issue 2: Customs are not bound by any time limit for issuance of permission for transshipment. There are specific challenges with respect to delays to such permission that need to be addressed.

- In many cases, the customs commissioner's permission is required for transshipment.

**Solution:** Allow the assistant commissioner to give transshipment permission as securing the availability of the commissioner can be a challenge.

- Shipments moving from one airport enabled with electronic process for customs to another similarly enabled airport requires landing certificate despite the ability for electronic confirmation and message exchange.

**Solution:** Allow EDI notification to be adequate and not require manual landing certificate as obtaining the same adds to delays and transaction costs, and prevents prior permission mechanism.

Issue 3: With respect to provisions for prior permission for transshipment, customs should make available automatic prior permission mechanism for transshipment in the following cases:

- for tail to tail (directly from aircraft to aircraft) based on the Master Airway Bill presented to the assistant commissioner,
- where the Master Airway Bill –House Airway Bill mentions the final port of discharge,
- where transshipment is to a notified Air Freight Station, and
- within 4–5 working hours where final port of discharge is different from the Master Airway Bill–House Airway Bill.

## APPENDIX 2: INTRASTATE MOVEMENT OF TRUCKS—PROCEDURAL CHALLENGES (INCLUDING WITH A GOODS AND SERVICES TAX)

Overland transportation in India mainly comprises road travel. Even when other modes (rail, air, inland water, or coastal transport) are used, the last mile of transit between two points is by road. Roads are also where state and central authorities have set up check-posts (or operate flying squads) for ensuring tax and transportation-related compliance among vehicles carrying cargo.

**Table A2.1 Key Challenges for Seamless Logistics in India**

Operational Challenges	Transparency Challenges
<ul style="list-style-type: none"> <li>• Multiple systems in operation in different states</li> <li>• Inefficient process of obtaining transit pass (manual in some states, only possible at the border post in some)</li> <li>• Manual checking and inspection</li> <li>• Manual checking and inspection leading to delays and long queues</li> <li>• Multiple check-posts</li> <li>• Delays due to stops made by “flying squads”</li> <li>• Non-integration of Road Transport Organization and tax-related check-posts</li> <li>• Authorities asking truck driver for backup documents and details that the truck driver may not have.</li> </ul>	<ul style="list-style-type: none"> <li>• Commercial tax officers on ground often exercise their own discretion to determine whether compliance is adequate. In most of these situations, the positions adopted by these officers are not within the parameters prescribed under the law. Some examples of this include               <ol style="list-style-type: none"> <li>1. being harassed for minor errors in transporter declarations;</li> <li>2. vehicles being seized and no remedy or corrective action being taken for several days despite full cooperation of transporter with tax regulators;</li> <li>3. in a multiple consignment vehicle, minor problem with a single consignment leading to the whole truck being held up or in some cases even seized (or the threat of seizure); and</li> <li>4. rent-seeking behavior related to the abovementioned issues (also, delaying the movement of vehicle on extraneous grounds).</li> </ol> </li> <li>• In many cases, mobile squads do not register the incident (on what grounds the vehicle was stopped and held up).</li> </ul>

Source: Author’s compilation.

One of the major aims of the GST reforms is to facilitate the seamless movement of goods across state borders and reform the existing process of monitoring domestic cargo movement. This is the most critical “ease-of-doing-business” reform as far as the logistics industry is concerned.

The following recommendations could facilitate the development of a well-regulated, (yet) stoppage-free movement of goods across India:

- development of a single national declaration to replace the multiple forms and systems of online data entry in different states,
- elimination of check-posts,
- replacement of check-posts with a modern inspection management system regime for the monitoring of goods in transit.



Replacing check-posts would take the form of an information technology-enabled mobile flying squad operating on the basis of a risk management system with proper checks and balances integral to its operation. Details of such an inspection management system are provided in Table A2.2.

**Table A2.2: Transparent Inspection Regime**

Flying squads to make random checks based on risk management system principles.
Squad officer to have a scanner or tablet to input number or bar code, which will provide all shipment details to officer directly (by referring to the “national waybill” as suggested in section 2).
If any physical inspection needs to be undertaken, it should be documented with a camera recording. The recording is to be kept in a database for 24 hours, with the option of downloading it for the registered transporter and consignee whose vehicle or shipment was stopped.
Physical verification of shipment, when undertaken, should be done in a location not farther than five kilometers from the place where truck was intercepted.
<p><b>Checks and Balances</b></p> <ul style="list-style-type: none"> <li>• All stoppages to be logged into the system online with the specific reason for stoppage included. To facilitate this, codes for all the reasons a vehicle is stopped should be created (e.g., incomplete filing of information, bar code not present, pure random check, prior intelligence).</li> <li>• Any stop (i) greater than 15 minutes, (ii) asking for any information other than that contained in an e-declaration and invoices, or (iii) for the actual physical verification of goods to be logged in as an exception, with the reason such an exception was made included.</li> <li>• Number of stops on specific routes and number of actual noncompliance found by such stops to be maintained in a database in compliance with the Right to Information Act, 2005 to allow access to any citizen wishing to see the data. An annual report, reporting stoppage data and sorted by different sections of route, is to be published based on the database maintained by the Government of India.</li> </ul>

Source: Author’s compilation.

### APPENDIX 3: TRADE FACILITATION FOR PRODUCTION NETWORKS (CURRENT POLICY REFORMS AND FUTURE NEXT STEPS)

Table A3 summarizes the key trade facilitation goals important for India's participation in global production networks and an overall reduction in the costs of doing business. These objectives are also relevant to the development of the East Coast Economic Corridor (ECEC) and Vizag-Chennai Industrial Corridor (VCIC).

**Table A3: Framework for Trade Facilitation in India**

Main Issue	Specific Actions Required	Action Taken to Date
Infrastructure	Identification of last-mile linkage issues with trunk infrastructure	Work in progress in the East Coast Economic Corridor (ECEC) and Vizag-Chennai Industrial Corridor (VCIC) and under the <i>Sagarmala</i> initiative's port-led development projects; Speed of implementation is key
	Involving local urban bodies in planning and restructuring for airport and ports	Institutionalized mechanisms yet to be developed
	Revenue sharing models for port and airport operators designed for efficiency and attractive investment rather than revenue maximization for the government exchequer	Some progress made through the Major Ports Authority Act, 2016, which replaces an older act from 1963; Similar changes to the Airport Economic Regulatory Authority have yet to be undertaken
	Airport operators directed to give adequate importance to cargo as opposed to just passengers	Civil aviation policy released in July 2016 makes this a policy recommendation. Implementation and clear guidelines yet to be developed
Logistics capacity and investment regime	Development and reform for industry standards in trucking	Work in progress; Substantive changes to Regional Transport Office regulations and Motor Vehicles Act are still needed. Procedural reforms on the implementation of rules on the ground need to be framed.
	Liberalization of coastal shipping (foreign participation)	No progress
	Open Skies initiatives	Some progress in new Civil Aviation policy released in July 2016, with unilateral Open Skies beyond 5,000 kilometers from key Indian airports (covers European Union and United States markets); Specific initiatives targeting key Association of Southeast Asian Nations hubs still to be initiated.

*continued on next page*

Table A3 continued

Clearance and procedural issues at the border	Single Window integration	Work in progress; Single declaration for all agencies being implemented in stages. Some key agencies have been on-boarded into a working Single Window. Full integration planned in stages over the next 18 months.
	Effectively paperless environment	Work in progress; Need for paper copies of some statutory customs documents filed online have been dispensed with. Paper copies of supporting documents, copies needed for export incentives, and duty drawback are yet to be integrated. Procedural integration dispensing with need for physical signature and stamp of officers yet to be fully notified.
	Deferred duty payment facility	This has been integrated as a concept of revised AEO program. However, the prerequisites for this facility disqualify many small and medium-sized enterprises.
	Expedited shipments and immediate release guidelines	Courier electronic data interchange (EDI) is yet to go live. Thus, courier shipment is still subject to several restrictions on weight, value, and nature of shipment.
	Risk management system (RMS) implementation	RMS for both exports and imports has been implemented. However, the percentage of (coverage) of RMS (automatically cleared) shipments remains lower compared with major comparators.
	Bonded warehousing	New reforms on bonded warehousing norms have improved process and procedures. However, integration with customs EDI is still pending.
	Transshipment	Procedures and norms remain cumbersome.
	Land borders in South Asia	Remains cumbersome; However, the Bangladesh–Bhutan–India–Nepal Motor Vehicles Agreement has created opportunities for reform.
Domestic movement of cargo	State borders management	Huge congestion at state borders due to tax-related compliance. Reforms expected with implementation of the Goods and Services Tax, but states will need to agree and implement.
	Vehicle inspection regimes	Road Transport Organization inspection regimes are crude, with rampant rent-seeking. Major reforms are needed.

Source: Author's compilation.

## APPENDIX 4: CARGO DWELL TIME AT INDIAN AIRPORTS

Table A4: Cargo Dwell Time at Indian Airports (hours)

Airport	Dwell Time (Exports)	Dwell Time (Imports)
Singapore	6	4-8
Frankfurt	6	4
Incheon	2-3	2-7
Dubai	2-3	2-6
Hong Kong, China	3-6	4-8
Delhi	36	119
Mumbai	48	96
Chennai	48	72
Kolkata	48	72
Bangalore	36	48
Hyderabad	12	36

Source: Ministry of Civil Aviation, Government of India. 2012. *Air Cargo Logistics in India: Working Group Report*. Delhi.

## APPENDIX 5: ORIGIN OF CONTAINERIZED CARGO BY HINTERLAND REGION IN INDIA

Table A5: Origin of Containerized Cargo by Hinterland Region in India

State	Cargo (%)	
Gujarat	20	
Maharashtra	20	
Tamil Nadu	15	
National Capital Region	14	
Andhra Pradesh	6	
Karnataka	6	
Punjab	5	
Rajasthan	5	
Eastern India	5	
Madhya Pradesh	2	
Uttar Pradesh	2	
Kerala	2	
<b>Color Coding:</b>		
Natural hinterland of western coast ports		
Eastbound traffic could move to eastern coast ports under certain circumstances		
Natural hinterland of eastern coast ports		

Source: Asian Development Bank. 2014. *Vizag-Chennai Industrial Corridor Conceptual Development Plan. Final Report*. Manila.

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## **Development of East Coast Economic Corridor and Vizag–Chennai Industrial Corridor:** *Critical Issues of Connectivity and Logistics*

This paper provides a detailed discussion of the policies and strategies that should be considered to attain the overall objective of improving shipping and air connectivity in East Coast Economic Corridor and Vizag–Chennai Industrial Corridor while developing an enabling environment for efficient logistics support businesses that play a critical role in the management of global supply chains. The East Coast Economic Corridor and Vizag–Chennai Industrial Corridor will align with India’s national objectives of expanding domestic markets, pursuing port-led industrialization, and integrating domestic companies into the vibrant global value chains of Southeast Asia and East Asia.

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