

# **REVISED FINAL DETAILED PROJECT REPORT**

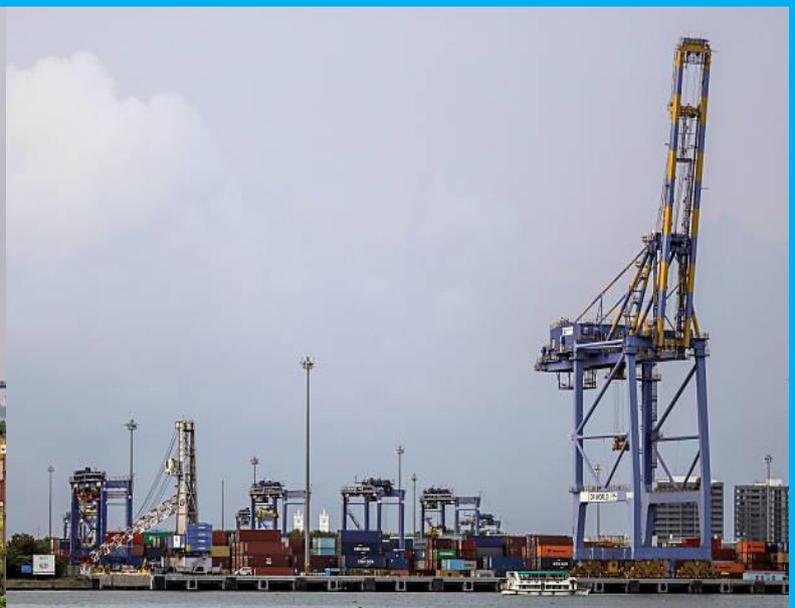
**Project: Preparation of Detailed Project Report (DPR) for  
Transforming ICTT as a Successful Transshipment Hub for  
receiving vessels up to 16-meter draft**



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**OCTOBER, 2025**



# Voyants Solutions Private Limited. (VSPL)

<b>Client:</b>	Cochin Port Authority Willingdon Island, Kochi, Kerala- 682009		
<b>Project:</b>	Consultancy Services for Preparation of Detailed Project Report (DPR) for Transforming ICTT as a Successful Transshipment Hub for receiving vessels up to 16-meter draft	<b>Project No.:</b>	GUR / 24-25 /2425-018/PORTS (Consultant's project no. reference)
<b>Title:</b>	REVISED FINAL DETAILED PROJECT REPORT	<b>LoA Ref No.:</b>	09 of 2024-25
		RP004	R4

## References:

- LoA received vide Lr.No.T12/2016/2024-C/807 (W) dated 05<sup>th</sup> September, 2024.
- Kick-Off Meeting with CoPA on 25<sup>th</sup> & 26<sup>th</sup> September, 2024.
- Inception Report submitted on 30<sup>th</sup> September, 2024.
- Comment on Inception Report, received from CoPA on 10<sup>th</sup> October, 2024 and 21<sup>st</sup> October, 2024.
- Agreement signed on 15<sup>th</sup> October, 2024.
- Demand & Market Assessment Report submitted on 27<sup>th</sup> October, 2024.
- Revised Inception Report, incorporating comments from CoPA, submitted on 30<sup>th</sup> October, 2024.
- Draft Detailed Project Report submitted on 31<sup>st</sup> December, 2024.
- Revised Demand & Market Assessment Report, incorporating comments from CoPA, submitted dated 13<sup>th</sup> February, 2025.
- Revised Draft DPR, incorporating comments from CoPA, submitted dated 14<sup>th</sup> February, 2025.
- Comment on Draft DPR, received from CoPA on 04<sup>th</sup> March, 2025.
- Revised Demand and Market Assessment Report and Final DPR submitted on 07<sup>th</sup> March, 2025.
- Comments on Demand and Market Assessment Report and DPR received on 17<sup>th</sup> March 2025
- Revised Demand & Market Assessment Report, incorporating comments from CoPA, submitted dated 25<sup>th</sup> March, 2025.
- Revised Draft DPR, incorporating comments from CoPA, submitted dated 02<sup>nd</sup> April, 2025.
- Revised Draft DPR, incorporating comments from CoPA, submitted dated 14<sup>th</sup> July, 2025.
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## Executive Summary

**Project:** Consultancy Services for Preparation of a Detailed Project Report (DPR) for Transforming ICTT, Cochin, into a Successful Transshipment Hub for receiving vessels up to 16-meter draft.

**Client:** Cochin Port Authority (CoPA)

**Consultant:** Voyants Solutions Private Limited (VSPL)

### 1. Introduction & Project Rationale

Cochin Port's International Container Transshipment Terminal (ICTT), India's first transshipment terminal, was envisioned to recapture Indian container traffic from foreign hubs like Colombo, Singapore, and Jebel Ali. However, with a draft limited to **14.5 meters**, ICTT cannot accommodate modern mainline vessels, which require drafts of **15.5 meters and above**. This constraint has hindered its potential, leading to a traffic profile skewed towards gateway cargo and the loss of key shipping services.

This DPR establishes the critical need to increase the draft at ICTT to **16.0 meters** to ensure its survival, competitiveness, and transformation into a viable transshipment hub. The deepening is a strategic imperative to align with India's **Maritime Amrit Kaal Vision 2047** and **Maritime India Vision 2030**, reducing dependency on foreign ports and saving substantial foreign exchange.

### 2. Top Commodities Contributing to Trade Volume

This section examines India's cargo profile, identifying key commodities driving EXIM trade. It compares major and non-major ports across India's western and eastern coasts, emphasizing the **southern region's growing share** in containerized trade. Commodities like POL, coal, fertilizers, containers, and other industrial goods dominate traffic handled by South Indian ports, underscoring the regional potential for Cochin's ICTT.

### 3. Traffic Projections & Impact of Draft Enhancement

The consultant has projected container traffic under **Realistic** and **Pessimistic** scenarios, with and without the draft increase.

- **Without Draft Increase (14.5m):** ICTT faces significant traffic erosion. Gateway growth would slow, and transshipment volumes would remain

minimal. By 2042-43, total traffic is projected to reach only **1.13 Million TEUs** (Realistic) or **0.34 Million TEUs** (Pessimistic), signalling a terminal decline in relevance.

- **With Draft Increase to 16.0m:** The project unlocks transformative potential:
  - **Retains and grows gateway traffic** by securing mainline vessel services.
  - **Attracts significant transshipment volumes**, including recapturing lost services (~50,000 TEUs) and securing new anchor line services (~200,000 TEUs).
  - Total projected traffic by 2042-43 rises to **2.03 million TEUs** (Realistic) and **1.07 million TEUs** (Pessimistic).

The analysis concludes that **failure to increase the draft will result in irreversible cargo diversion** to competing ports like Vizhinjam and Colombo, crippling ICTT's long-term viability.

#### 4. Rationale for 16 m Draft

The rationale is aligned with **India's Maritime Vision 2030** and **Amrit Kaal Vision 2047**, which emphasize creation of transshipment capacity within India to reduce foreign dependence. The chapter details:

- Benchmarking against major global transshipment hubs.
- The strategic advantage of ICTT's location on international shipping routes.
- The enabling role of DP World as a strategic investor.

Expected benefits including reduced logistics cost, enhanced EXIM efficiency, and economic growth for Kerala and southern India. It also stresses the need for policy support similar to what Vizhinjam Port has received through grants and royalty concessions.

#### 5. Key Enablers & Competitive Analysis

To compete effectively, ICTT must address several factors beyond draft:

- **Competition:** Vizhinjam Port's natural deep draft and Colombo's expansion pose existential threats. Vizhinjam is already handling large mainline vessels and is aggressively targeting transshipment cargo.
- **Strategic Location:** Cochin is well-positioned on international shipping routes, but this advantage is nullified without the requisite draft.

- **Anchor Tenant:** Attracting a major global shipping line (e.g., Maersk, CMA CGM) is crucial. This can be achieved through a combination of **priority berthing, deep tariff discounts, and the proposed 16m draft.**
- **Cost Competitiveness:** Vessel Related Charges (VRC) and Lighthouse Dues need to be rationalized to match regional benchmarks like Colombo.

## 6. Financial Feasibility

The financial analysis evaluates the project based on the capital cost of dredging and additional maintenance dredging costs.

- **Capital Cost:** Estimated at **INR 560.50 Crore** (including GST).
- **Funding Scenarios:**
  - **Grant Scenario (Recommended):** With 100% capital grant from the Government of India, the project is financially viable, with a **Positive NPV of INR 109.90 Crore** and an **IRR of 26.4%**.
  - **Self-Funded Scenario:** If funded through debt, the project is **not financially feasible**, yielding a negative NPV.
- **Initial Revenue Shortfall:** The project will face an operational cost shortfall in the initial years (peaking at ~INR 22 Crore in 2027-28), requiring a cost-sharing arrangement between CoPA and the terminal operator, IGTPL (DP World).

## 7. Conclusion & Recommendations

The proposal to deepen ICTT to a 16-meter draft is **strategically vital and financially feasible only with central government support.** It is a necessary intervention to protect existing investments, secure India's transshipment capabilities, and foster regional economic development.

The consultant recommends:

1. **Immediate Approval:** Expedite the project to capitalize on the narrow window before Vizhinjam and Colombo fully consolidate their positions.
2. **Central Grant Funding:** Secure a **100% capital grant** for the dredging project.
3. **Bridge Funding for Opex:** Provide temporary budgetary support or facilitate a cost-sharing mechanism to cover the initial operational cost shortfall.
4. **Policy Support:** Collaborate with relevant ministries to rationalize Lighthouse Dues and other charges to enhance ICTT's cost competitiveness.

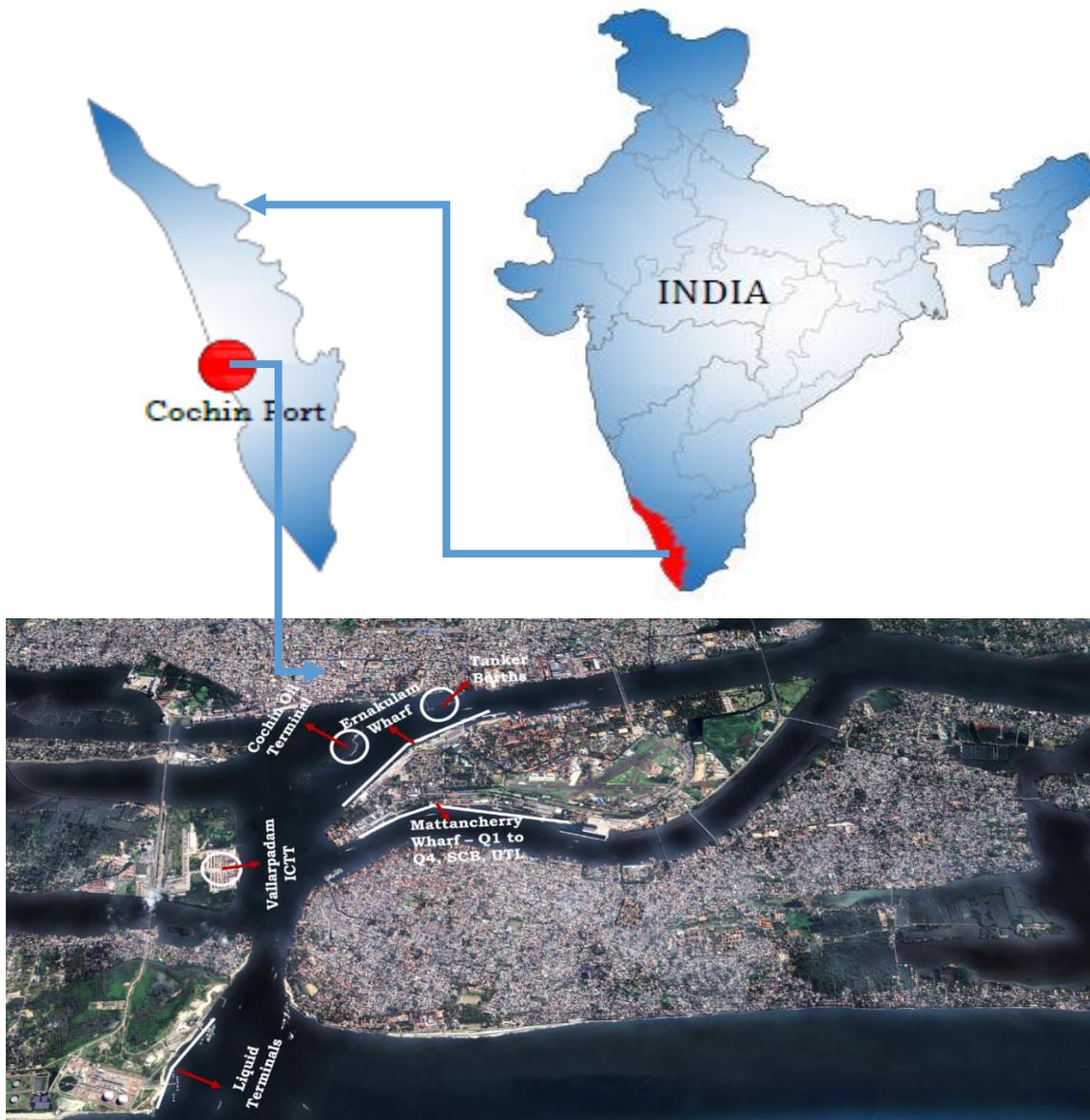
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5. **Cluster Strategy:** Promote the **Cochin-Vizhinjam cluster** as a dual-hub model for South India, offering redundancy and choice to global shipping lines.

Deepening ICTT is not merely an infrastructure upgrade but a **strategic necessity** to secure Cochin Port's future and bolster India's position in the global maritime landscape.

## CHAPTER 1 INTRODUCTION

### 1.1 BACKGROUND

Cochin Port is one of the twelve major ports in India and is a natural, all-weather port located on the southwest coast of India in Kerala as shown in **Figure 1-1**. The port is positioned on artificial island known as Willingdon Island which is tucked inside the backwaters. The calm and tranquil conditions offered by the backwaters enable the movement of vessels round the year.



**Figure 1-1 Location Map of Cochin Port**

Government of India selected Cochin Port to make it as the transshipment port for India by developing International Container Transshipment Terminal (ICTT) as it was the Indian Major Port that was located closest to the international trunk routes. With this vision, the ICTT with its first phase was commissioned in February, 2011 having quay length of 600 m and draft up to 14.5 m. At present, the ICTT has a container handling capacity of 1.2 million TEUs per annum.

The rising global growth has given increased global maritime trade over the years and ultimately lead to continuous increase in vessel sizes ranging from 10,000 TEUs to 24,000 TEUs requiring draft upto 18.0 m.

With draft limited up to 14.5 m at the ICTT, it is not feasible to accommodate larger vessels requiring draft more than 14.5 m. Based on this aspect, Cochin Port Authority (CoPA) intends to achieve higher draft to attract trans-shipment cargo and transform the ICTT as a successful Transshipment Hub for receiving vessels up to 16m draft.

## **1.2 OBJECTIVE**

Keeping in view the above background, the main objective is to prepare a "Detailed Project Report (DPR) for transforming ICTT into a Successful Transshipment Hub capable of receiving vessels with a 16 m draft."

The objective includes the following key aspects:

- Examine the incremental traffic potential that could be realized by deepening ICTT to accommodate vessels with a 16 m draft, compared to the current 14.5 m draft.
- Evaluate the financial feasibility of the expansion.
  - The incremental costs of capital dredging and annual maintenance dredging, which will be borne by CoPA for the expansion of ICTT, alongside the potential increase in revenue from Vessel Related Charges (VRC) as outlined in the agreement.
  - The royalty revenue accruing to CoPA from the terminal operator, M/s IGTP, who will construct an additional 350 m quay and strengthen 50 m of the adjacent, existing 600 m quay, as per the License Agreement.

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### **1.3 PROJECT CONSULTANT**

CoPA has appointed M/s Voyants Solutions Private Limited (herein after “Consultant”) as the Consultant vide letter Number T12/2016/2024-C/807 (W) dated 05<sup>th</sup> September, 2024 to provide “Consultancy Services for preparation of Detailed Project Report (DPR) for transforming ICTT as a Successful Transshipment Hub for receiving vessels up to 16m draft”.

### **1.4 PROJECT STATUS**

As per the scope of assignment, the Consultant has to prepare the DPR which shall include Traffic Study followed by Financial Analysis & Project Feasibility, suggesting possible models of funding and project implementation.

The Consultant received Letter of Acceptance (LoA) from CoPA on 05<sup>th</sup> September, 2024, in reference to the Consultants’ bid on 29<sup>th</sup> July, 2024.

The Consultant visited Cochin Port between 25<sup>th</sup> September, 2024 and 26<sup>th</sup> September, 2024 wherein it had detailed discussion with Cochin Port Authorities and authorities of IGTPL, part of DP World. The Consultant also shared its data request with both the authorities.

The Consultant, based on preliminary secondary research and discussion with authorities of Cochin Port and IGTPL, submitted its Inception Report, dated 27<sup>th</sup> September, 2024. It has also submitted its revised Inception Report, incorporating suggestions, made by CoPA.

The Consultant, based on detailed secondary research, data received from CoPA and IGTPL authorities, and detailed discussion with relevant stakeholders, submitted Demand and Market Assessment Report, dated 27<sup>th</sup> October, 2024. The report covers existing commodity trade in South India with focus on gateway and transshipment container in peninsular India. It has also submitted its Revised Draft DPR dated 14<sup>th</sup> July 2025 post multiple discussion and iterations.

The consultant has prepared Final Detailed Project Report which includes existing traffic container scenario at Cochin Port with respect to gateway and transshipment traffic, and accordingly projected the container traffic. Financial feasibility has also been assessed for the project traffic.

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## **1.5 STRUCTURE OF THE REPORT**

The present document contains the Demand and Market Assessment Report and organised into six chapters summarized below.

### **CHAPTER 1: INTRODUCTION**

This Chapter (current chapter) presents background and objective of the project, project status and structure of the report.

### **CHAPTER 2: TOP COMMODITIES CONTRIBUTING TO TRADE VOLUME**

This Chapter details the cargo handled by both major and non-major ports in India, as well as the cargo handled at the Western and Eastern ports. Additionally, it provides commodity-wise cargo details (volume and share) handled by South Indian ports.

### **CHAPTER 3: CONTAINER TRAFFIC**

This Chapter details the container traffic handled at major and non-major ports, with respect to gateway and transshipment container traffic. It also compares total container traffic handled in South India with that the port of Colombo, Singapore and Klang.

### **CHAPTER 4: CONTAINER TRAFFIC AT COCHIN PORT**

This Chapter provides the details of historical data of the traffic handled along with projections for gateway traffic, foreign transshipment traffic, and coastal transshipment traffic.

### **CHAPTER 5: RATIONALE FOR 16M DRAFT**

This chapter highlights the necessity and rationale for increasing the draft at ICTT from 14.5M to 16M.

### **CHAPTER 6: FINANCIAL ANALYSIS AND PROJECT FEASIBILITY**

This Chapter examines the financial feasibility of project given the cost and revenue projection.

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## CHAPTER 2

### TOP COMMODITIES CONTRIBUTING TO TRADE VOLUME

#### 2.1 INTRODUCTION

The Ports in the country handle around 90% of EXIM Cargo by volume and 70% by value. Traditionally, commodities in India have been handled by Major & Non-Major ports. There are 12 major ports and more than 200 non-major ports in the country. All the 12 major ports are functional. Major ports are under the administrative control of Ministry of Shipping, Government of India. Non-major ports are under the jurisdiction of respective State Maritime Boards/ State Government. Out of the more than 200 non-major ports, around 65 ports are handling cargo and the others are only “Port Limits” where no cargo is handled. Fishing vessels and small ferries use these ports for fishing activity and to carry passengers across the creeks. Non-major ports include all the ports (except major port) along the coast line of states of Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Odisha and West Bengal.

Major Ports Include:

1. Deendayal Port (Erstwhile Kandla)
2. Mumbai Port
3. Jawaharlal Nehru Port
4. Mormugao Port
5. New Mangalore Port
6. Cochin Port
7. Chennai Port
8. Kamarajar (earlier Ennore)
9. V. O. Chidambaram Port
10. Visakhapatnam Port
11. Paradip Port
12. Syama Prasad Mookerjee Port

Location of Major Ports is shown in **Figure 2-1** below.



**Figure 2-1: Location of Major Ports in India**

**Table 2.1** below represents year wise traffic handled by major and non-major ports.

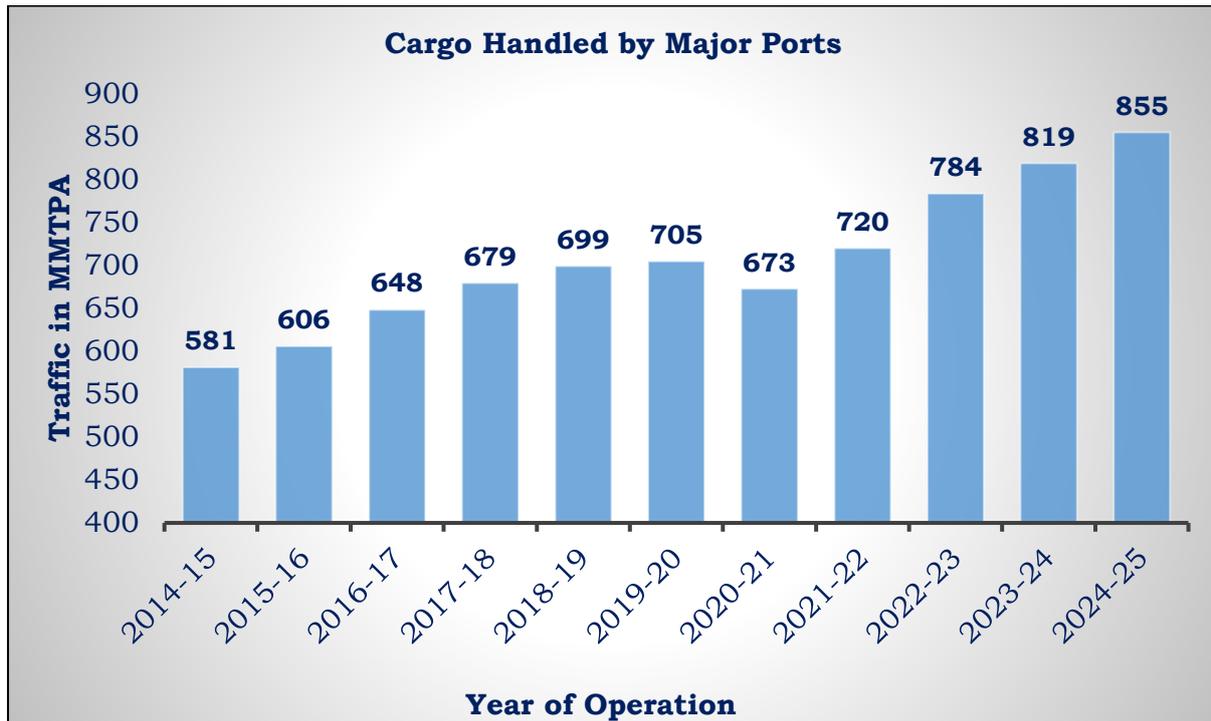
**Table 2.1 Traffic handled by major and non-major ports during 2018-19 to 2024-25**

Year	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Major Port	699	705	673	720	784	819	855
Non-Major Ports	583	615	577	604	651	724	748
Total Traffic	1,282	1,320	1,250	1,324	1,435	1,543	1,603

*All Figures are in MMTPA*

- During 2024-25, major and non-major ports in India have accomplished a total cargo throughput of 1,603 million MT reflecting an increase of 3.9% over 2023-24.
- The share of non-major port in the total traffic handled at Indian Ports decreased marginally from 46.9% in 2023-24 to 46.7% in 2024-25.

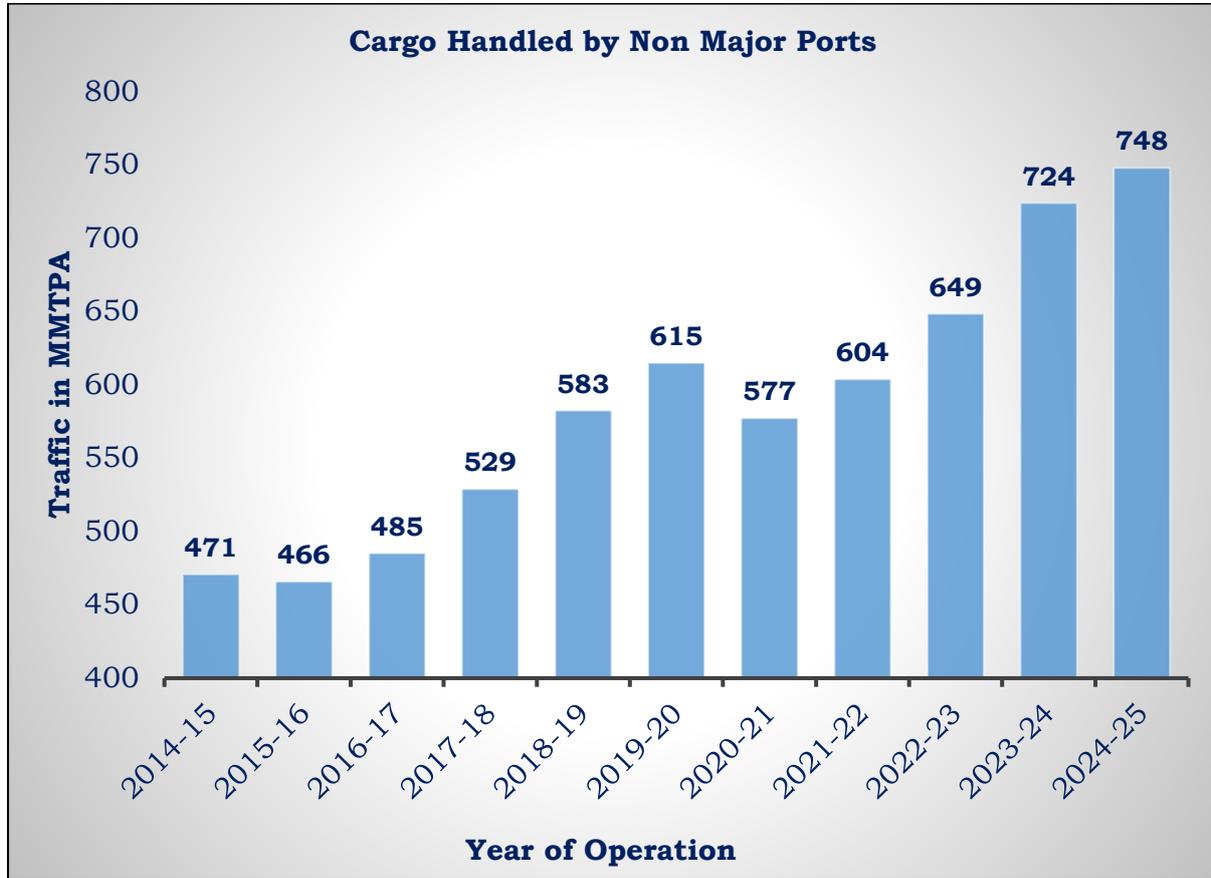
**Figure 2-2** below represents the growth of cargo handled by major ports over 2014-15 to 2024-25.



**Figure 2-2 Cargo handled by major ports during the period 2014-15 to 2024-25**

It is understood from the historical data that cargo handled by major ports has increased approximately 41% during the period 2014-15 to 2024-25 with a CAGR of 3.9%.

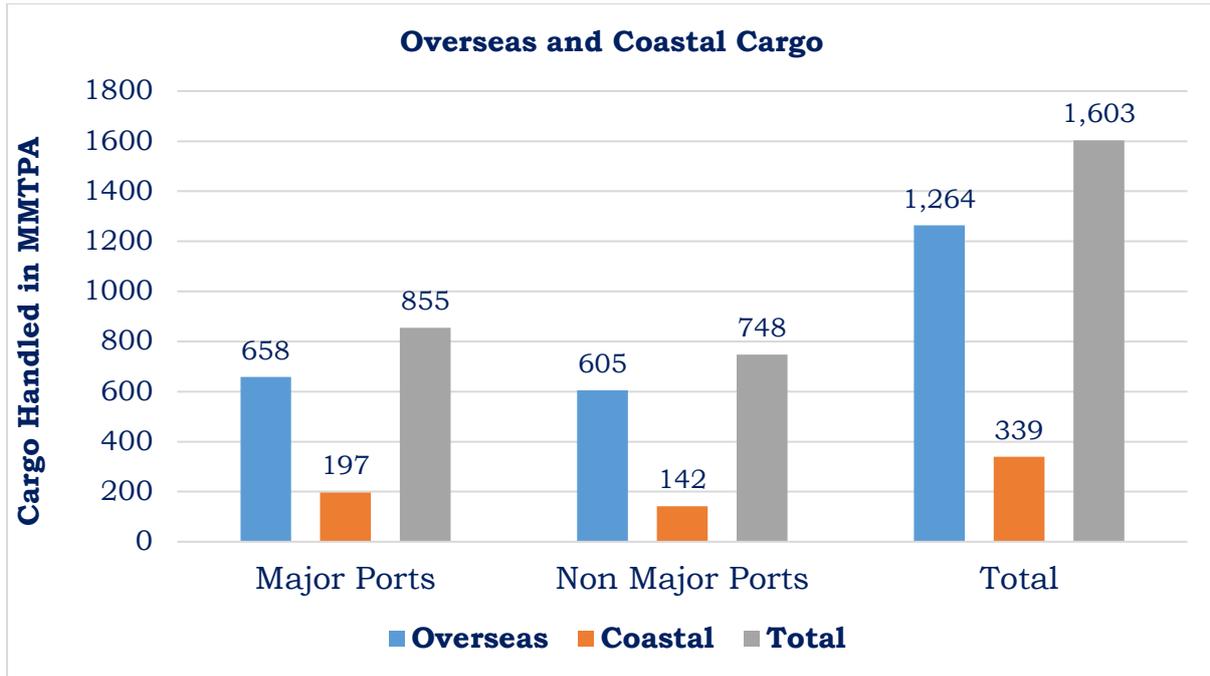
**Figure 2-3** below represents the growth of cargo handled by non-major ports over 2014-15 to 2024-25.



**Figure 2-3: Cargo handled by non-major ports during 2014-15 to 2024-25**

It is understood from the historical data that cargo handled by non-major ports has increased 53% during the period 2014-15 to 2024-25 with a CAGR of 4.7%.

Total traffic handled by all ports viz. major and non-major ports can be split into overseas and coastal cargo as represented in the **Figure 2-4** below.



**Figure 2-4 Overseas & Coastal Cargo (in MTPA) in 2024-25**

Overseas traffic forms 77% of total cargo handled at major ports with coastal traffic forming 23% of total cargo. Similarly, overseas traffic forms 81% and coastal traffic forms 19% of total cargo handled at non-major ports.

## 2.2 PORTS IN WESTERN COAST OF INDIA

Indian Western Coastline consist of following ports:

**Major Ports:** Deendayal Port Authority, Jawaharlal Nehru Port Authority, Mumbai Port Authority, Mormugao Port Authority, New Mangalore Port Authority, Cochin Port Authority.

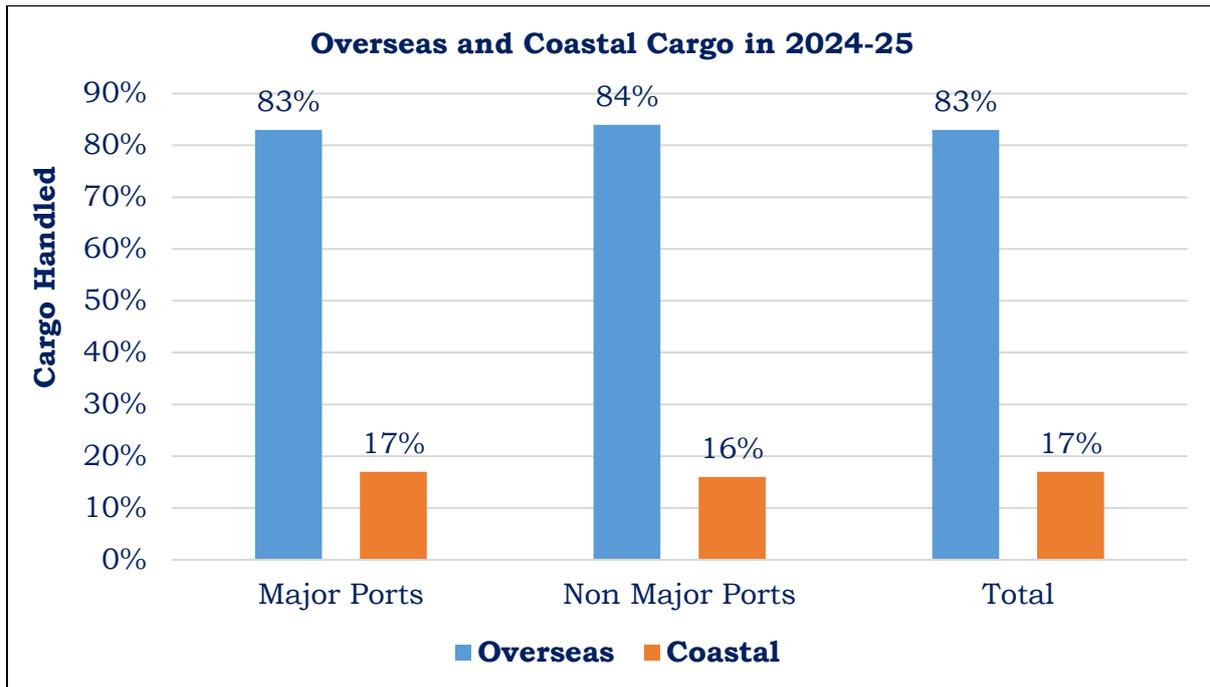
**Non-Major Ports:** Ports under jurisdiction of state of Gujarat, Maharashtra, Goa, Karnataka, Kerala and Union Territory of Lakshadweep.

**Table 2.2** below represents the cargo handled by ports in western coast during the fiscal year 2024-25

**Table 2.2 Cargo handled by Western Ports of India during 2024-25**

Particulars	Overseas	Coastal	Total
Non-Major Ports	472	93	564
Major Ports	342	71	413
Total Traffic	814	163	977

*All Figures are in Million Tonnes*



**Figure 2-5 Overseas and Coastal Cargo handled by Ports in Western Coast of India during 2024-25**

Share of overseas traffic as a percentage of total traffic is higher in both major and non-major ports. Average percentage of overseas traffic in total cargo handled across western coast line ports is 83% which is higher by approx. 4% when compared with total overseas traffic in India i.e. 79%.

### 2.3 PORTS ON EASTERN COAST OF INDIA

Indian Eastern Coastline consist of following ports:

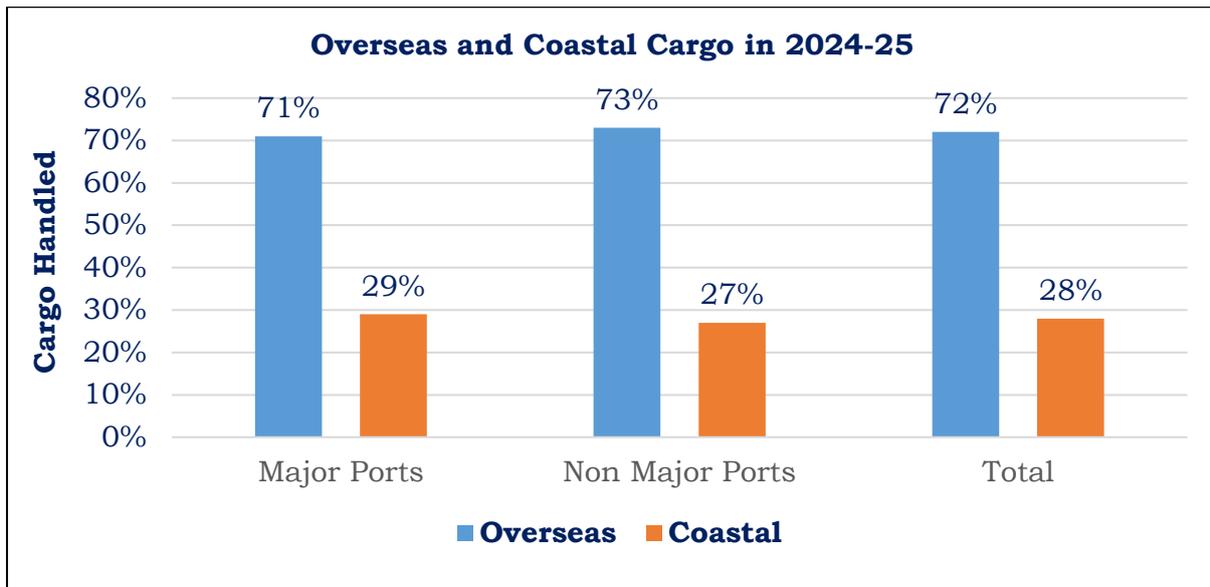
**Major Ports:** V.O. Chidambaranar Port Authority, Chennai Port Authority, Kamarajar Port Authority, Visakhapatnam Port Authority, Paradip Port Authority, Syama Prasad Mookerjee Port Authority

**Non-Major Ports:** Ports under jurisdiction of state of Tamil Nadu, Andhra Pradesh, Odisha, West Bengal and Union Territory of Puducherry and Andaman & Nicobar Islands.

**Table 2.3** below represents the cargo handled by ports in eastern coast during the year 2024-25. Table 2.3 Cargo handled by Eastern ports of India during the year 2024-25.

Particulars	Overseas	Coastal	Total
Non-Major Ports	134	50	183
Major Ports	316	126	442
Total Traffic	450	176	625

All Figures are in Million Tonnes



**Figure 2-6 Overseas and Coastal cargo handled by ports in Eastern Coast of India during the year 2024-25**

Share of overseas traffic as a percentage of total traffic is higher in both major and non-major ports. Average percentage of overseas traffic in total cargo handled across eastern coast line ports is approximately 72% which is lower by approximately 7% when compared with total overseas traffic in India i.e. approximately 79%.

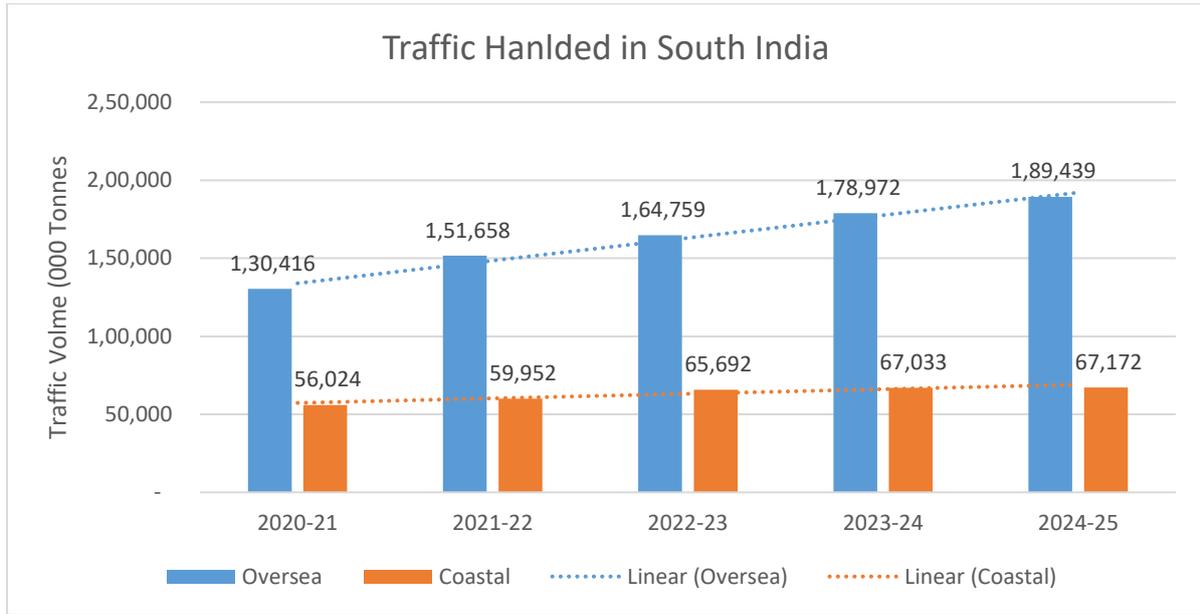
## 2.4 SOUTH INDIAN SCENARIO

South Indian Coastline consist of following ports:

**Major Ports:** V.O. Chidambaranar Port Authority, Chennai Port Authority, Kamarajar Port Authority, Cochin Port Authority, New Mangalore Port Authority

**Non-Major Ports:** Ports under jurisdiction of state of Tamil Nadu, Kerala, Karnataka and Union Territory of Puducherry, Lakshadweep and Andaman & Nicobar Islands.

**Figure 2-7** below represents the cargo handled by South Indian port during the fiscal year 2020-21 to 2024-25.



**Figure 2-7 Traffic handled by Ports in South India during 2018-19 to 2024-25**

Overseas traffic has increased in past 5 years i.e. from 130 million MT in fiscal year 2020-21 to 189 million MT in fiscal year 2024-25, an increase of 59 million MT, the trend in growth is positive CAGR of 9.8%. Coastal traffic has also seen an increase in volume. Absolute coastal traffic increased from 56 million MT in fiscal year 2020-21 to 67 million MT in fiscal year 2024-25. Total traffic has increased by a CAGR of 4.6%. In terms of absolute volume total traffic increased from 186 million MT in fiscal year 2020-21 to 257 million MT in fiscal year 2024-25.

South Indian ports cater to large variety of commodities which include POL Crude and POL Products, Fertilizers, FRM-Dry, FRM-Liquid, Food grains, Iron & Steel, Iron-scrap, Sugar, Vegetarian Oil, Salt, Coking Coal, Thermal Coal, Cement, Iron Ore/Pellet, Other Ores, Tea & Coffee, Chemical, Containers and other commodities.

**Table 2.4** below details the traffic handled across all commodities in south Indian ports in past 6 years.

**Table 2.4 Commodity-wise cargo handling details of ports in South India in past recent years**

Fiscal Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
POL Crude	40,580	43,587	40,998	35,788	38,289	45,115	45,384
POL Products	18,557	19,341	19,522	16,062	19,140	18,715	18,778
Fertiliser	1,081	1,429	1,572	2,190	1,102	1,324	1,509
FRM - Dry	1,596	1,093	1,093	1,035	1,491	1,267	1,333

Fiscal Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
FRM - Liquid	832	906	979	837	690	658	749
Food Grains	1,503	68	80	61	151	190	124
Iron & Steel	2,363	2,132	3,006	2,498	2,604	1,882	2,134
Iron Scrap	41	34	9	9	90	1,088	122
Sugar	383	0	26	109	296	0	0
Veg. Oil	2,511	2,598	2,393	2,005	2,124	2,732	2,747
Salt	307	180	157	168	365	543	540
Coking Coal	10,498	7,904	8,924	6,463	6,093	11,180	13,083
Thermal Coal	35,304	37,469	26,526	21,005	26,743	42,222	32,031
Cement	2,929	2,299	2,570	2,018	1,839	1,941	1,785
Iron Ore/Pellets	5,599	5,279	5,261	4,783	5,177	1,661	5,000
Other Ore	2,302	1,318	946	450	925	800	2,092
Chemicals	101	0	0	0	0	0	0
Container	54,072	58,001	67,406	64,219	75,588	74,846	80,595
Others	21,015	24,833	30,705	26,740	28,903	24,287	37,999
<b>Total</b>	<b>201,574</b>	<b>208,471</b>	<b>212,173</b>	<b>186,440</b>	<b>211,610</b>	<b>230,451</b>	<b>246,005</b>

All figures are in 000' Tonnes

It is observed from the table that Iron & Steel, Iron Scrap, Sugar, Salt and Chemicals form a small share of total volume handled. POL Crude, POL Products, Coking Coal, Thermal Coal, Iron Ore/Pellets and Container form a large share of total volume handled.

To understand the top commodities which contributes to approximately 70% of volume, the consultant has computed percentage contribution of each commodity as presented in **Table 2.5** below.

**Table 2.5 Share of commodities handled by ports in South India**

Fiscal Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
POL Crude	20%	21%	19%	19%	18%	20%	18%
POL Products	9%	9%	9%	9%	9%	8%	8%
Fertiliser	1%	1%	1%	1%	1%	1%	1%
FRM - Dry	1%	1%	1%	1%	1%	1%	1%
FRM - Liquid	0%	0%	0%	0%	0%	0%	0%

Fiscal Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Food Grains	1%	0%	0%	0%	0%	0%	0%
Iron & Steel	1%	1%	1%	1%	1%	1%	1%
Iron Scrap	0%	0%	0%	0%	0%	0%	0%
Sugar	0%	0%	0%	0%	0%	0%	0%
Veg. Oil	1%	1%	1%	1%	1%	1%	1%
Salt	0%	0%	0%	0%	0%	0%	0%
Coking Coal	5%	4%	4%	3%	3%	5%	5%
Thermal Coal	18%	18%	13%	11%	13%	18%	13%
Cement	1%	1%	1%	1%	1%	1%	1%
Iron Ore/Pellets	3%	3%	2%	3%	2%	1%	2%
Other Ore	1%	1%	0%	0%	0%	0%	1%
Chemicals	0%	0%	0%	0%	0%	0%	0%
Container	27%	28%	32%	34%	36%	32%	33%
Others	10%	12%	14%	14%	14%	11%	15%
<b>Total</b>	<b>100%</b>						

All figures are in 000' Tonnes

A closer look at container traffic share highlights that, as a percentage of total traffic volume, share of container traffic has been in the range of 27% to 36%. Other commodities with larger share have following range:

- POL Crude: 18% to 21%
- POL Products: 8% to 9%
- Thermal Coal: 11% to 18%

**Table 2.6** below shows year wise contribution of top 4 commodities mentioned above.

**Table 2.6 Year-wise contribution of top 4 commodities in India**

Fiscal Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
POL Crude	20%	21%	19%	19%	18%	20%	18%
POL Products	9%	9%	9%	9%	9%	8%	8%
Thermal Coal	18%	18%	13%	11%	13%	18%	13%
Container	27%	28%	32%	34%	36%	32%	33%
<b>Total</b>	<b>74%</b>	<b>76%</b>	<b>73%</b>	<b>74%</b>	<b>75%</b>	<b>78%</b>	<b>72%</b>

From the table above, it can be concluded that POL Crude, POL Products, Thermal Coal and Container traffic together contribute 70% or more of total traffic volume in south Indian ports.

Due to unavailability of full breakup of commodity wise data for fiscal year 2024-25, consultant has analyzed the data available as on date for the same.

**Table 2.7 Commodity-wise breakup of Fiscal Year 2024-25**

POL	Iron Ore	Coal	Fertiliser & FRM	Container	Others	Total
73,892	2,861	61,622	2,573	88,278	27,367	<b>256,593</b>
29%	1%	24%	1%	34%	11%	<b>100%</b>

**POL** includes POL crude, POL products, LPG/LNG, Naphtha and Fuel oil.

**Iron Ore** includes iron ore fines and Pellets

**Coal** includes Thermal Coal, Coking coal, other coal and Pet coal

**Fertiliser & FRM** includes Fertilisers, FRM-Liquid, FRM-Dry and Rock Phosphate Source:

Non-Major Ports/State Maritime Boards

All figures are in 000' Tonnes

It is understood from the table above that container traffic has remained range of 27% to 36% as observed for fiscal years 2017-18 to fiscal year 2023-24.

## CHAPTER 3

### CONTAINER TRAFFIC

#### 3.1 INTRODUCTION

Global container throughput is estimated around 850 million TEUs in 2024, driven by growth in international trade, with leading ports like Shanghai and Singapore being the key contributors. Throughput is estimated to reach 988 million TEUs by 2027, reflecting ongoing investment in port infrastructure and rising trade volumes. In this chapter, we have analysed container traffic movement under various categories such as container traffic handled at major and non-major ports, gateway container traffic, transshipment container traffic and comparison of total South Indian container traffic with respect to container traffic handled at port of Colombo, Singapore and Port Klang.

#### 3.2 PROMINENT INTERNATIONAL PORTS IN SOUTH ASIAN REGION

The Ports of Colombo, Singapore, and Klang are among the international transshipment hubs which fall on International Suez-Far East Trade Route. A major chunk of container transshipment volume destined for Indian hinterland is handled by these three ports.

##### 3.2.1 Port of Singapore

**Table 3.1** below shows container terminals at the port of Singapore operated by PSA Corporation.

**Table 3.1 Container terminals at the port of Singapore**

Terminal Name	Berths	Quay Length (Mtr)	Capacity (TEU/Yr)	Status	Special Features
<b>Tanjong Pagar Terminal</b>	7	~2,000	Phased out (Limited use)	Being decommissioned	Former key terminal, now mostly inactive
<b>Keppel Terminal</b>	13	~3,200	Integrated into Tuas Port	Being phased out	Previously handled mainline services
<b>Brani Terminal</b>	9	~2,500	Integrated into Tuas Port	Being phased out	Transitioning to Tuas Port
<b>Pasir Panjang Terminal</b>	57	~16,000	~35 million	Active	Automated cranes, deep-water berths,

					handles mega vessels
<b>Tuas Port</b>	66 (planned)	~26,000	~65 million (upon completion)	Expanding	World's largest automated port, smart port technology

### Key Insights:

- Tanjung Pagar, Keppel, and Brani Terminals are being phased out and integrated into Tuas Port.
- Pasir Panjang Terminal remains operational and will transition to Tuas over time.
- Tuas Port will be fully completed by the 2040s and will handle 65 million TEUs annually, making it the world's largest automated container port.

### 3.2.2 Port Klang:

Port Klang, Malaysia's principal port, serves as a pivotal maritime hub in Southeast Asia. It comprises three main terminals. **Table 3.2** below shows container terminals at the port Klang.

**Table 3.2 Container Terminals at Port Klang**

Terminal Name	Operator	Description
<b>Northport</b>	Northport (Malaysia) Bhd	Offers comprehensive multipurpose port facilities and services, handling containerized and conventional cargo.
<b>Southpoint</b>	Northport (Malaysia) Bhd	Formerly the original port facility, now focusing on conventional cargo handling.
<b>Westports</b>	Westports Malaysia Sdn Bhd	A modern, multi-cargo terminal equipped to handle containers, breakbulk, dry bulk, liquid bulk, vehicles (roll-on/roll-off), and other conventional cargoes.

### Key Highlights:

- **Northport:** Operated by Northport (Malaysia) Bhd, it provides a wide range of port services, including container and conventional cargo handling.
- **Southpoint:** Also, under the management of Northport (Malaysia) Bhd, Southpoint is the oldest section of Port Klang, now primarily dedicated to conventional cargo operations.
- **Westports:** Managed by Westports Malaysia Sdn Bhd, this terminal is located on Pulau Indah and is recognized for its fully automated operations. It handles various types of cargo, including containers, breakbulk, dry bulk, liquid bulk, and vehicles.

**Table 3.3** below shows details of container terminals at the port Klang.

**Table 3.3 Details of Terminals at Port Klang**

Terminal Name	Operator	Number of Berths	Quay Length (Mtrs)	Depth (Mtrs)	Major Shipping Lines
<b>Northport</b>	Northport (Malaysia) Bhd	21	3,200	15	Maersk Line, CMA CGM, Evergreen Line
<b>Southpoint</b>	Northport (Malaysia) Bhd	8	1,600	9	Regional and feeder services
<b>Westports</b>	Westports Malaysia Sdn Bhd	11	3,200	16	COSCO, Hapag-Lloyd, Ocean Network Express (ONE)

In 2023, Port Klang handled approximately 14.06 million TEUs (Twenty-Foot Equivalent Units) of container traffic, marking a significant increase from previous years.

This growth underscores Port Klang's pivotal role in global maritime trade, reflecting its strategic importance in Southeast Asia.

### 3.2.3 Port of Colombo

**Table 3.4** below shows details of Container Terminals at the Port of Colombo.

**Table 3.4 Container Terminals at the Port of Colombo**

Terminal Name	Operator	Capacity (TEU/Yr)	Berths	Depth (Mtrs)	Special Features
<b>Jaya Container Terminal (JCT)</b>	Sri Lanka Ports Authority (SLPA)	~2.5 million	4	15	Oldest container terminal, upgraded to handle large vessels
<b>Unity Container Terminal (UCT)</b>	Sri Lanka Ports Authority (SLPA)	~0.5 million	1	12	Primarily used for feeder services and domestic trade
<b>South Asia Gateway Terminals (SAGT)</b>	South Asia Gateway Terminals (Pvt) Ltd.	~2 million	3	15	First public-private partnership terminal in Sri Lanka
<b>Colombo International Container</b>	Colombo International	~3 million	4	18	Deepwater terminal capable of

Terminals (CICT)	Container Terminals Ltd.				handling the largest vessels
<b>West Container Terminal (WCT)</b>	Adani Group (51% stake), SLPA, John Keells Holdings	~3.5 million (planned)	3	20	Phase-1 is operational since April 2025
<b>East Container Terminal (ECT)</b>	Sri Lanka Ports Authority (SLPA)	~3.0 Million (planned)	3	18	Phase-1 is operational since August 2025

### Key Highlights:

- JCT and UCT are operated by the Sri Lanka Ports Authority and primarily serve regional trade.
- SAGT is the first public-private partnership terminal and handles transshipment cargo.
- CICT is a deepwater terminal catering to mega vessels, operated by China Merchants Port.
- WCT and ECT are new terminal projects, expected to boost Colombo's capacity significantly.

### 3.2.4 Container Traffic in South Asian Region

**Table 3.5** below highlights the container traffic handled across these ports during fiscal year 2018 to fiscal year 2024.

**Table 3.5 Container Traffic in South Asian Region**

Total Traffic in Million TEUs							
Port	2018	2019	2020	2021	2022	2023	2024
Port of Singapore	36.60	37.26	36.94	37.57	37.29	39.01	40.90
Port Klang	12.32	13.58	13.24	13.72	13.22	14.06	14.64
Port of Colombo	6.21	7.05	6.85	7.25	6.86	6.95	7.78
<b>Total</b>	<b>55.13</b>	<b>57.89</b>	<b>57.04</b>	<b>58.54</b>	<b>57.38</b>	<b>60.02</b>	63.32

### 3.3 CONTAINER TRAFFIC IN INDIAN PORTS

**Table 3.6** below highlights the container traffic handled across all Indian ports during financial year 2017-18 to financial year 2023-24.

**Table 3.6 Container Traffic in Indian Ports**

Port Type	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Non-Major Ports	5.00	5.67	6.67	6.94	6.08	7.77	9.12
Major Ports	9.14	9.88	9.89	9.61	11.22	11.42	12.31
<b>Total Traffic</b>	<b>14.14</b>	<b>15.54</b>	<b>16.56</b>	<b>16.55</b>	<b>17.30</b>	<b>19.19</b>	<b>21.43</b>

Traffic has increased at a compound annual growth rate of approx. 6.1% in major ports. Non-major ports have shown a higher CAGR of approx. 12.7%. Total traffic across Indian ports has increased at a CAGR of 8.7%.

### Gateway Container Traffic:

**Table 3.7** below highlights the gateway container traffic handled at major ports during fiscal year 2017-18 to fiscal year 2023-24.

**Table 3.7 Gateway Container Traffic in Major Ports**

Gateway Traffic in Million TEUs at Major Ports							
Major Port	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
NMPT	0.12	0.13	0.15	0.15	0.15	0.17	0.20
Cochin	0.52	0.56	0.58	0.60	0.58	0.59	0.65
V.O. C	0.70	0.72	0.76	0.73	0.76	0.71	0.72
Chennai	1.55	1.62	1.38	1.29	1.47	1.42	1.54
VPA	0.38	0.44	0.40	0.48	0.51	0.52	0.66
Kamarajar	0.00	0.06	0.12	0.11	0.39	0.38	0.56
Deendayal	0.12	0.24	0.44	0.51	0.49	0.49	0.46
Mumbai	0.04	0.03	0.03	0.02	0.02	0.02	0.01
JNPA	4.77	5.07	4.91	4.57	5.59	5.92	6.27
Mormugao	0.03	0.04	0.03	0.02	0.01	0.00	0.00
Paradip	0.01	0.01	0.01	0.02	0.01	0.01	0.01
SMPK	0.80	0.83	0.84	0.69	0.74	0.71	0.75
<b>Total</b>	<b>9.03</b>	<b>9.74</b>	<b>9.66</b>	<b>9.19</b>	<b>10.72</b>	<b>10.94</b>	<b>11.84</b>

It is observed that JNPA handles more than 50% of the total gateway container traffic among major ports.

### Transshipment Container Traffic:

**Table 3.8** below highlights the transshipment container traffic handled at major ports during fiscal year 2017-18 to fiscal year 2023-24.

**Table 3.8 Transshipment Container Traffic in Major Ports**

Transshipment Traffic in Million TEUs at Major Ports							
Major Port	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
NMPT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cochin	0.04	0.03	0.04	0.09	0.16	0.10	0.11
V.O. C	0.00	0.02	0.04	0.03	0.02	0.03	0.03
Chennai	0.00	0.00	0.00	0.10	0.13	0.05	0.05
VPA	0.01	0.01	0.01	0.01	0.00	0.00	0.01
Kamarajar	0.00	0.00	0.01	0.09	0.09	0.17	0.11
Deendayal	0.00	0.00	0.01	0.00	0.01	0.00	0.01

Mumbai	0.01	0.00	0.00	0.00	0.00	0.00	0.00
JNPA	0.06	0.06	0.12	0.11	0.10	0.13	0.16
Mormugao	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paradip	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SMPK	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>0.11</b>	<b>0.13</b>	<b>0.23</b>	<b>0.42</b>	<b>0.50</b>	<b>0.48</b>	<b>0.47</b>

It is observed from the table above that only 3 major ports viz. JNPA, Cochin and Kamarajar handle approximately 80% of the total transshipment traffic in major ports. Individual shares of these ports stand at 35%, 22% and 23% respectively.

### 3.4 GATEWAY TRAFFIC AT SOUTH INDIAN PORTS

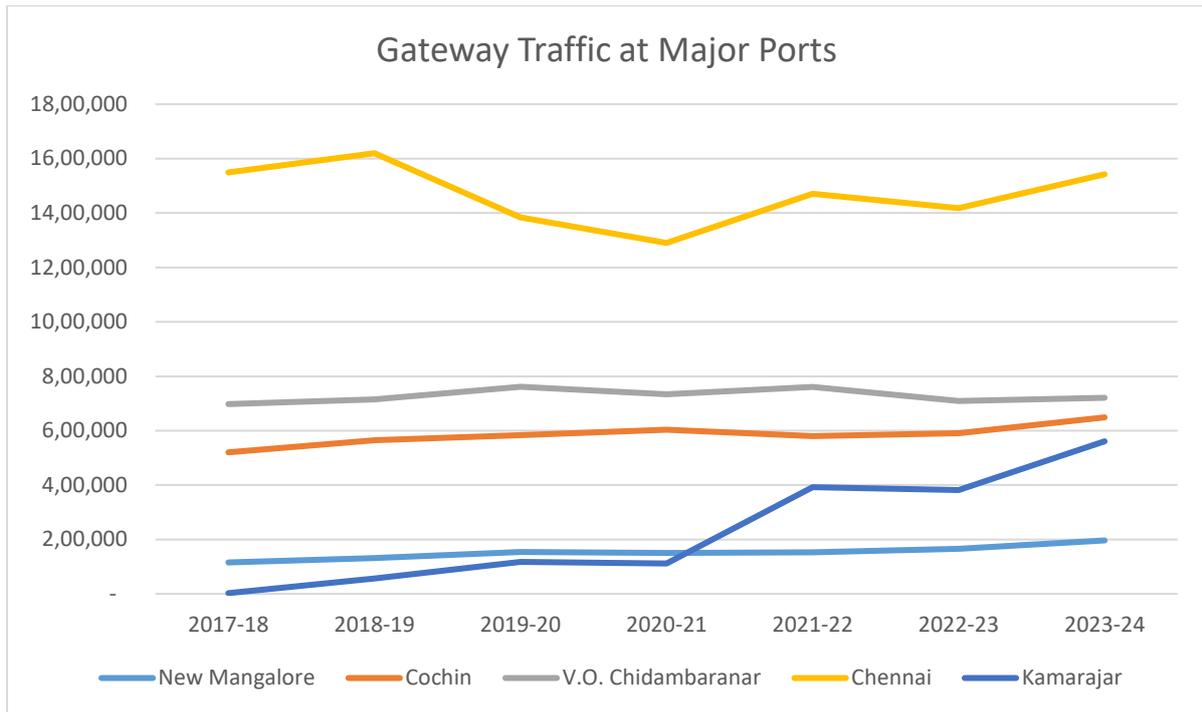
Gateway traffic is defined as the aggregate traffic including categories of Import traffic, Export traffic and Re-stow traffic. **Table 3.9** below highlights the gateway traffic handled across South Indian major ports.

**Table 3.9 Gateway Traffic (in TEUs) handled across South Indian major and Kattupalli Port (Non-major port)**

Port Name	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
NMPT	115,498	131,613	153,351	150,445	152,484	165,515	196,424
Cochin	520,451	564,434	583,878	602,936	579,418	590,564	648,832
V.O.C	697,631	715,120	761,268	734,137	760,297	708,819	721,061
Chennai	1,549,457	1,619,857	1,383,971	1,290,125	1,470,413	1,417,426	1,542,925
Kamarajar	2,678	57,049	117,569	111,421	392,482	382,199	560,847
<b>Major Ports</b>	<b>2,885,715</b>	<b>3,088,073</b>	<b>3,000,037</b>	<b>2,889,064</b>	<b>3,355,094</b>	<b>3,264,523</b>	<b>3,670,088</b>
<b>Kattupalli (Non Major)</b>	493,260	592,399	690,644	540,339	434,784	685,625	827,785

It is understood from the table above that Chennai port along with by V.O Chidambaranar port handle 2.2 million TEUs of container gateway traffic, which is more than 50% of gateway traffic handled by all south Indian major ports. Cochin port has a share of 18% in handling gateway traffic by major ports.

**Figure 3-1** below shows the trend of traffic volume handled by south Indian ports.



**Figure 3-1 Gateway Traffic (in TEUs) handled by major ports**

Whereas Chennai and V.O Chidambaranar ports handle more the 50% of south Indian gateway traffic, Chennai port has seen an overall decline in total traffic handled from 1.55 million TEUs in fiscal year 2017-18 to 1.54 million TEUs in fiscal year 2023-24. V.O Chidambaranar port has grown at a marginal CAGR of 0.6%, handling 0.72 million TEUs in fiscal year 2023-24.

Traffic at Cochin port has grown at a CAGR of 4.5% which is in line with average annual growth of all major south Indian ports.

Total gateway container traffic of South India has increased from 3.6 million TEUs to 5.1 million TEUs, showing total growth of 30% from fiscal year 2017-18 to fiscal year 2023-2024.

**Potential to Attract More Traffic:**

Figure below represents the influence region under 200 Km radius of South Indian Ports.



**Figure 3-2 Influence region of Major South Indian Ports**

Chennai Port and Kamarajar Port are located at a distance of 700 Km and 720 Km respectively from Cochin Port. V.O. Chidambaranar Port is located at a distance of 330 Km and Vizhinjam at distance of 230 Km. Considering narrow width at peninsular India and presence of four major ports, besides non-major ports, the secondary and tertiary influence regions of these ports tend to overlap. Hence each of these ports attract substantial traffic from primary influence region and compete with each other for their share in secondary and tertiary influence region.

### 3.5 GATEWAY TRAFFIC AT COLOMBO PORT

Port of Colombo has seen a degrowth in total gateway traffic since 2017. Economic and political instability within the country has impacted the domestic trade in Sri Lanka in recent years.

**Table 3.10** below highlights the gateway traffic at Colombo Port.

**Table 3.10 Gateway Traffic (in TEUs) at Colombo Port**

Year	2017	2018	2019	2020	2021	2022	2023
Colombo	1,467,486	1,445,128	1,426,277	1,241,301	1,399,311	1,226,499	1,195,665

### 3.6 TRANSSHIPMENT TRAFFIC

Table 3.11 below highlights Major Global Transshipment Hubs.

**Table 3.11 Major Global Transshipment Hubs**

Port/Region	Estimated Annual Transshipment Volume (TEUs)	Remarks
Singapore	~35 million TEUs	The world's leading transshipment hub with advanced connectivity.
Busan (South Korea)	~12 million TEUs	A major Northeast Asian hub serving East-West trade.
Hong Kong	~8 million TEUs	Historically dominant; volumes have declined in recent years.
Jebel Ali (Dubai)	~15 million TEUs	Key hub in the Middle East with strong feeder and mainline links.
Colombo (Sri Lanka)	~6 million TEUs	An emerging South Asian hub capitalizing on route shifts.
Port Klang & Port Tanjung Pelepas (Malaysia)	~12 million TEUs	A significant Southeast Asian hub with expanding transshipment.
Other Secondary & Regional Hubs	~154 million TEUs	Distributed across Europe, the Americas, and other parts of Asia.

The above six major hubs collectively handle roughly **100 million TEUs**, while the remaining are handled by numerous secondary and regional ports.

#### Patterns & Correlations:

- ✓ **Concentration in Asia:** Major hubs in Asia (Singapore, Busan, Port Klang) account for a significant share of global transshipment due to their strategic locations along the East-West trade corridor and robust feeder networks.
- ✓ **Strategic Role of Hubs:** These ports serve as key nodes in the hub-and-spoke network, enabling shipping lines to consolidate cargo onto ultra-large vessels for long-haul routes. Their efficiency and connectivity directly influence the transshipment share.

- ✓ **Global Distribution:** While Asian hubs dominate, many European and American ports (e.g., Antwerp, Felixstowe, and Los Angeles) also capture transshipment volumes—especially for regional consolidation—contributing to the remaining global share.
- ✓ **Economic & Operational Factors:** Investments in infrastructure, digitalization, and sustainability initiatives (e.g., shore power, LNG bunkering) enhance a port’s competitiveness. As carriers seek to optimize costs and reduce turnaround times, the efficiency of these hubs plays a critical role in global trade patterns.

### **Colombo:**

Strategically located in the Indian Ocean, the Port of Colombo serves as a key transshipment hub connecting Asia, the Middle East, Africa, and Europe. India dominates Colombo’s transshipment volumes, accounting for 45-50% of throughput, with major ports like Chennai, Tuticorin, and Cochin relying on its deep draft and feeder connectivity. Bangladesh, Pakistan, and the Middle East (Jebel Ali, Salalah) also use Colombo as a vital transit point, while it facilitates trade with East Africa (Mombasa, Durban) and Southeast Asia (Singapore, Malaysia).

Despite its strong liner partnerships (Maersk, MSC, CMA CGM, Hapag-Lloyd), Colombo faces growing competition from emerging hubs like Jebel Ali, Singapore, and India’s developing transshipment ports (Vizhinjam, Galathea Bay). Its high dependence on Indian cargo flows remains both a strength and a potential vulnerability.

### **Singapore:**

As a leading global transshipment hub, the Port of Singapore connects major trade routes across Asia, Europe, the Americas, the Middle East, and Africa. China, India, and Southeast Asia contribute the highest transshipment volumes, with key ports in Shanghai, Ningbo, Mumbai, and Chattogram relying on Singapore for global connectivity. The port also facilitates trade between Gulf nations (Jebel Ali, Salalah), Europe (Rotterdam, Antwerp), and the US (Los Angeles, Savannah) with Asia-Pacific markets.

Singapore plays a crucial role in linking emerging economies in Africa (Mombasa, Durban) and Latin America (Brazil, Chile) with Asia. Major shipping lines, including

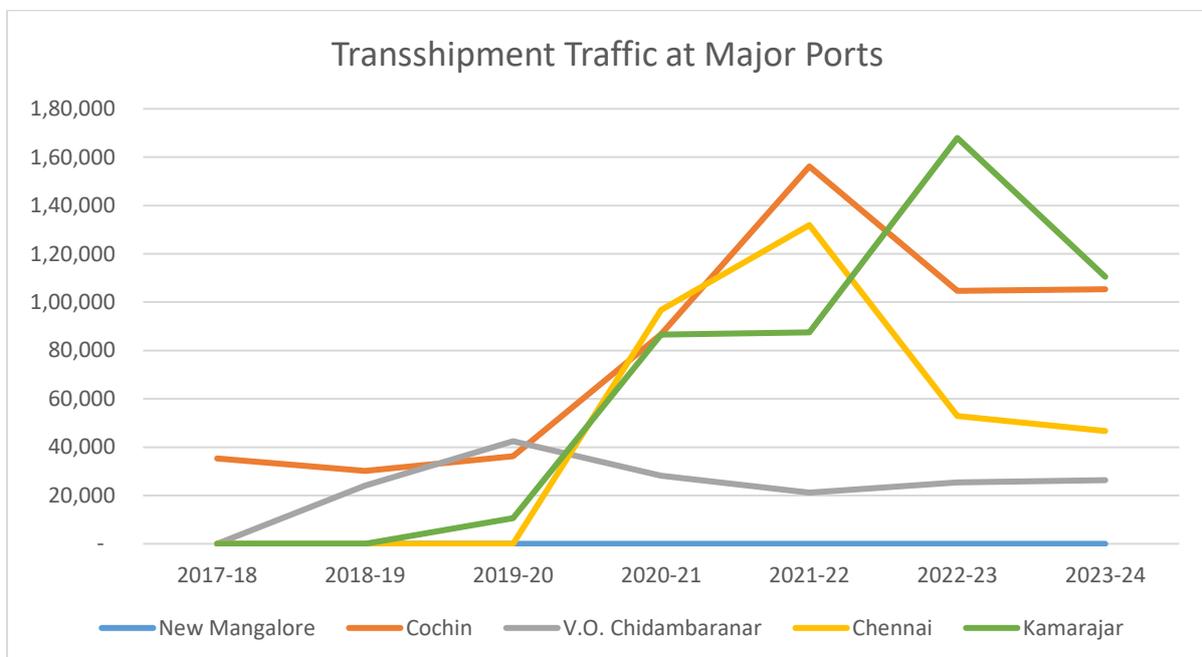
Maersk, MSC, CMA CGM, COSCO, ONE, Hapag-Lloyd, and Evergreen, leverage its strategic location for efficient cargo redistribution.

### Transshipment traffic at South Indian Ports

New Mangalore port handles very little volume of transshipment traffic. Only two ports viz. Cochin Port and Kamarajar Port have crossed the threshold of handling more than 1,00,000 TEU. Table below highlights the transshipment traffic handled by South Indian Major ports.

**Table 3.12 Transshipment Traffic (in TEUs) handled by major ports in South India**

Port Name	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
NMPT	-	-	-	-	-	-	-
Cochin	35,363	30,159	36,183	86,761	156,159	104,666	105,405
V.O.C	-	24,126	42,451	28,142	21,161	25,455	26,302
Chennai	-	-	-	96,801	131,906	52,879	46,615
Kamarajar	-	-	10,590	86,596	87,534	167,952	110,546
<b>Total</b>	<b>35,363</b>	<b>54,285</b>	<b>89,224</b>	<b>298,300</b>	<b>396,760</b>	<b>350,952</b>	<b>288,868</b>



**Figure 3-3 Transshipment Traffic (in TEUs) handled by major ports in South India**

Whereas transshipment traffic at V.O Chidambaranar port has fluctuated between 21,000 TEUs to 43,000 TEUs, traffic at Cochin, Chennai and Kamarajar has shown an erratic movement.

### **3.7 DETAILS OF VESSELS AT COLOMBO & VIZHINJAM PORT**

The consultant has referred to berthing programme of Colombo and Vizhinjam Ports to understand the draft of vessels calling at these ports.

It is seen that vessels with draft above 15m, regularly arrive at Colombo Port. Moreover, based on our interaction with shipping lines, it is understood that the maximum draft requirement of the largest vessel (amongst the network of vessels) needs to be accommodated at the transshipment hub – a key operational requirement for continuity of the route planning and flexibility for the line in deployment of vessels.

Some of the largest vessels such as SC Türkiye MSC Maya, MSC Rapallo and MSC Verona, requiring draft of 16m, are regularly calling Vizhinjam Port. Vizhinjam Port has natural draft advantage and can comfortably accommodate the world's largest vessels requiring 17m draft.

With the current trend towards larger vessels and higher draft availability in competing ports, it is of absolute relevance for Cochin Port to have at least 16 m draft to be a competing alternative transshipment option for the shipping lines.

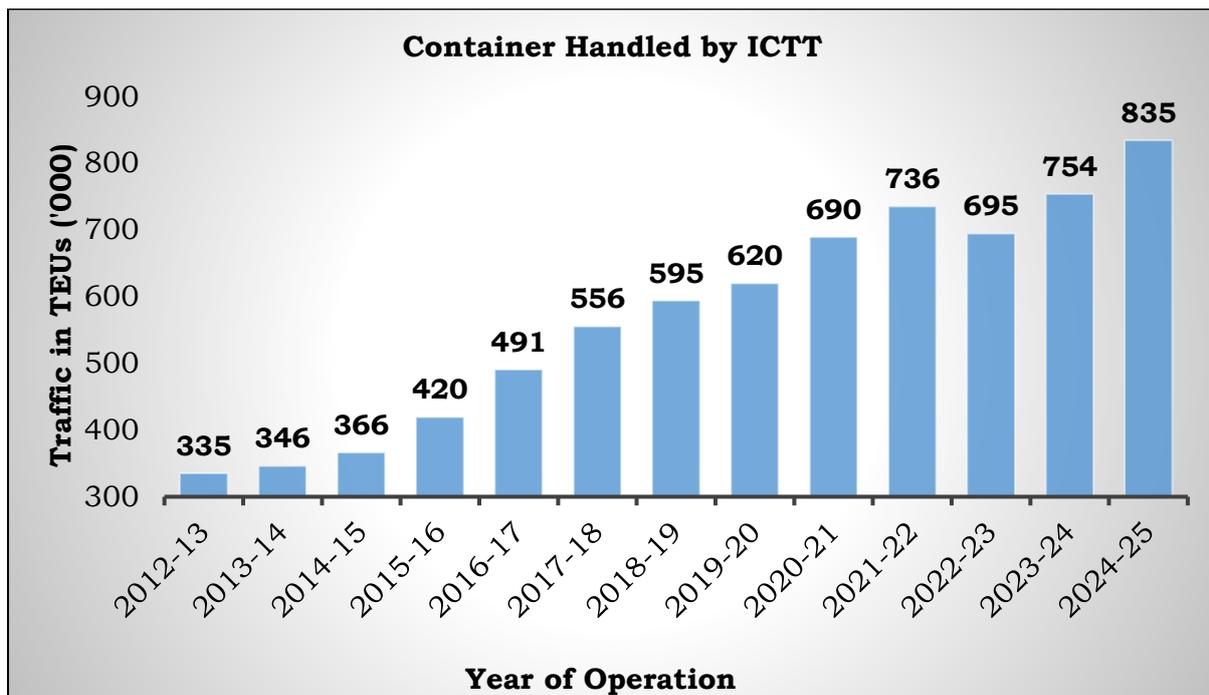
Moreover, additional factors such as operational flexibility (berthing infrastructure), time and cost advantage, ecosystem (feeder network to regional ports) and relationships established with the shipping lines over the years are equally important.

## CHAPTER 4

### CONTAINER TRAFFIC AT COCHIN PORT

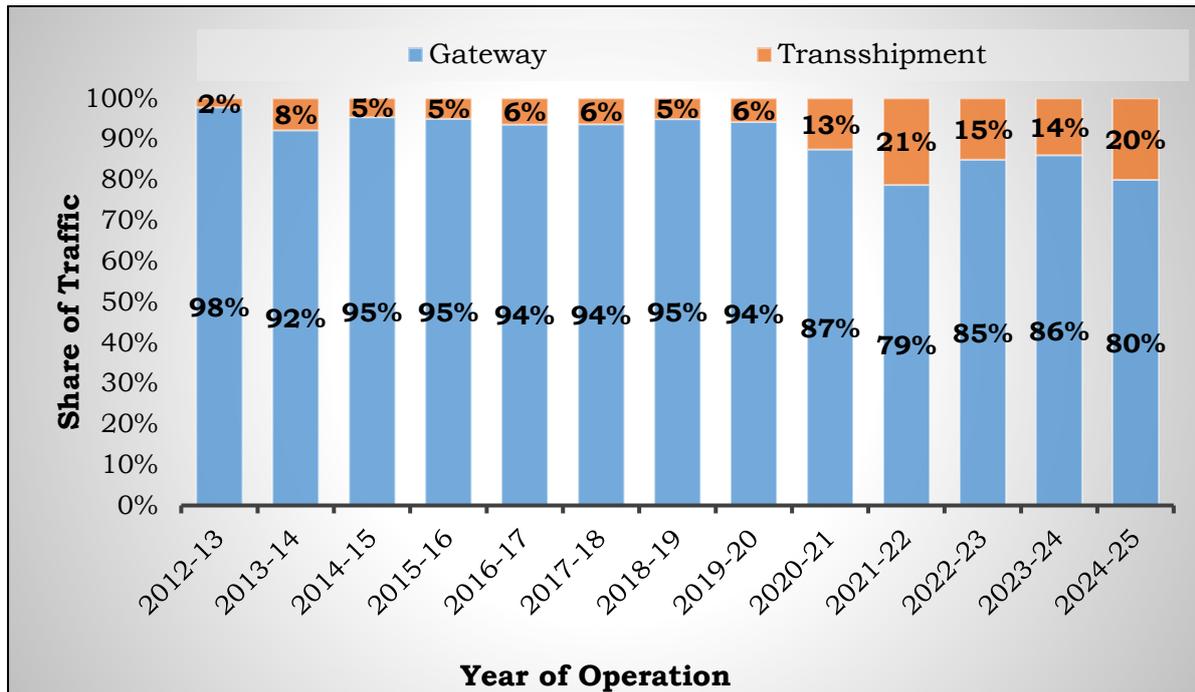
#### 4.1 INTRODUCTION

In 2004, DP World won the concession to operate the Rajiv Gandhi Container Terminal at Cochin Port and develop the International Container Transshipment Terminal (ICTT) at Vallarpadam. ICTT is the first transshipment terminal in India and the first container terminal to operate in a SEZ. The first phase of the terminal was commissioned on 11<sup>th</sup> February, 2011 with the quay length of 600 m and the draft of 14.5 m. The ICTT has the capacity of 1.20 MTEUs per annum and has handled 0.84 MTEUs in 2024-25. **Figure 4-1** below depicts the historical traffic of ICTT from 2012-13 to 2024-25.



**Figure 4-1 Container traffic handled in ICTT during 2012-13 to 2024-25**

The container traffic at ICTT has grown at CAGR of 7.9% between 2012-13 and 2024-25. Though ICTT was planned to attract transshipment traffic back to India from foreign terminals like Colombo, Singapore and Dubai, however, traffic handled at ICTT has been skewed towards gateway. Historical share of traffic between gateway and transshipment is represented in **Figure 4-2** below:



**Figure 4-2 Share of Gateway & Transshipment Traffic at ICTT**

The share of transshipment traffic was minuscule till 2019-20. It has moved to double digit post Covid-19 i.e. 2020-21.

#### 4.2 GATEWAY CONTAINER TRAFFIC

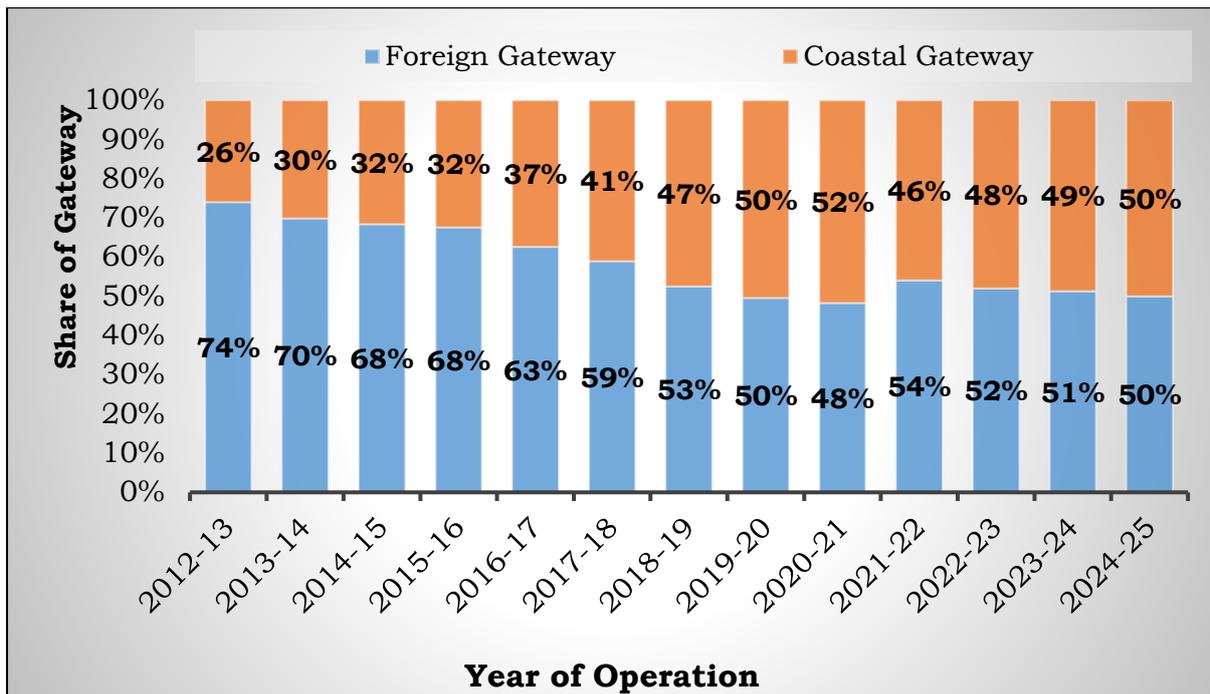
The ICTT Terminal of Cochin Port handled 0.84 MTEUs of container traffic in 2024-25. The gateway traffic accounted for 0.67 MTEUs or 80% of total traffic. The historical details of gateway traffic since financial year 2012-13 is produced in **Table 4.1** below:

**Table 4.1 Historical Gateway Traffic (in '000 TEUs) at ICTT**

Year	Foreign				Coastal				Total Gateway
	Import	Export	Restow	Foreign Gateway	Import	Export	Restow	Coastal Gateway	
2012-13	119	120	4	242	44	41	0	85	328
2013-14	109	111	3	223	50	46	0	96	319
2014-15	118	120	1	239	60	50	0	110	349
2015-16	132	136	2	270	71	58	0	129	399
2016-17	135	150	2	288	92	80	0	172	460
2017-18	146	156	5	307	113	100	0	214	520
2018-19	139	154	3	296	141	127	0	268	564

Year	Foreign				Coastal				Total Gateway
	Import	Export	Restow	Foreign Gateway	Import	Export	Restow	Coastal Gateway	
2019-20	138	149	2	290	153	141	0	294	584
2020-21	137	151	4	291	163	149	0	312	603
2021-22	146	164	4	313	142	124	0	266	579
2022-23	146	158	4	307	150	133	0	283	591
2023-24	155	174	3	333	168	148	0	316	649
2024-25	151	171	10	332	176	157	0	333	665

The gateway traffic has grown at CAGR of 6.1% between 2012-13 and 2024-25 with foreign gateway traffic growing at 2.7% CAGR and coastal gateway traffic at 12.0%. The higher growth in coastal gateway traffic has brought its share from one-fourth in 2012-13 to half in 2024-25. Historical share of foreign to coastal gateway traffic is presented in **Figure 4-3** below:

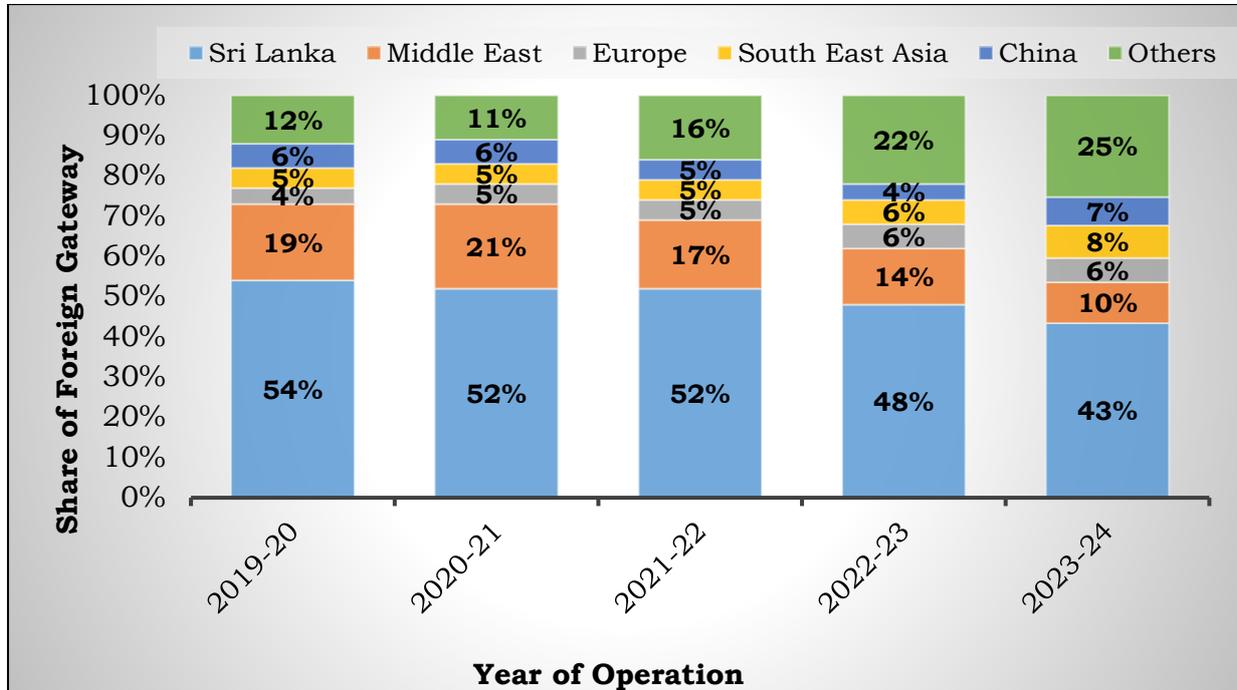


**Figure 4-3 Share of foreign to coastal gateway traffic at ICTT**

It can be seen from the above figure that share of foreign and coastal gateway traffic has been at around 50% in the past five to six years before which it was in favour of foreign gateway.

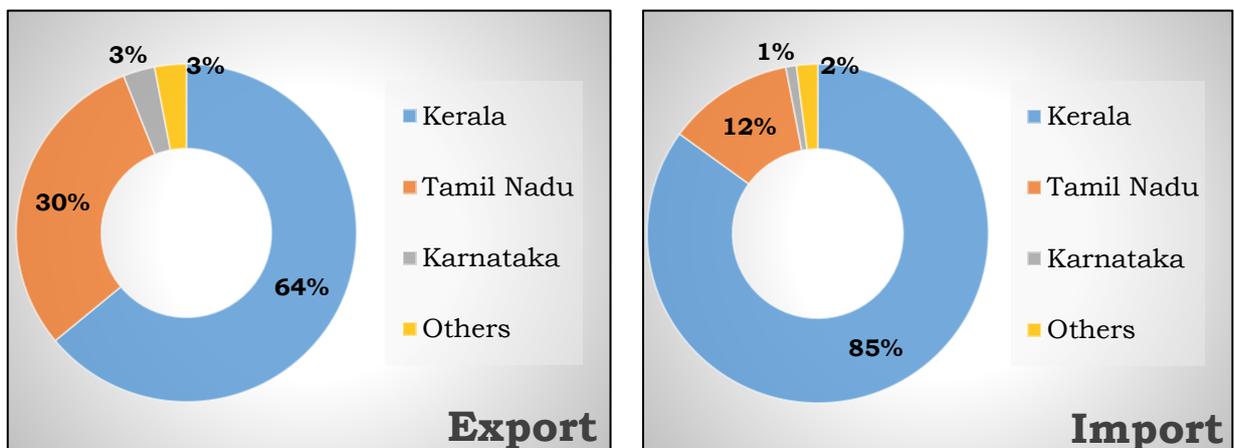
Around half of the foreign gateway traffic originates or is destined for Sri Lanka, Colombo Port being the largest transshipment hub for India based traffic. Sri Lanka

is followed by Middle East, Europe, South East Asia, China and others. Historical share of foreign gateway traffic is represented in **Figure 4-4** below:



**Figure 4-4 Historical share of foreign to coastal gateway traffic**

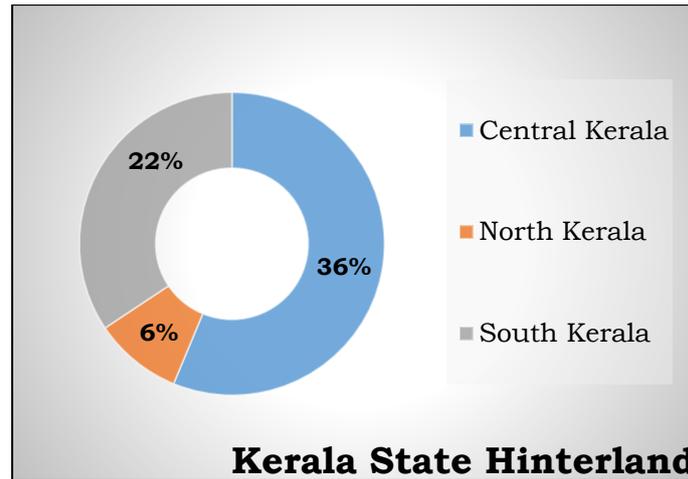
Based on the hinterland records, of the total gateway traffic, 64% of the export traffic originates from Kerala and 85% of the import traffic is destined for Kerala. Central Kerala has substantial contribution within Kerala. Kerala is followed by Tamil Nadu, particularly the West Tamil Nadu with a share of 30% in exports and 12% in imports. Balance gateway traffic is catered to/by Karnataka and Others. The share of total gateway traffic for export and import is presented in below **Figure 4-5**:



**Figure 4-5 Share of total gateway traffic based on Traffic Origination**

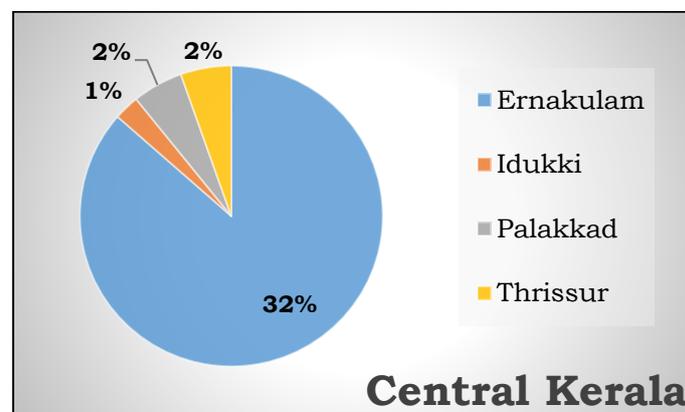
### 4.2.1 EXPORT GATEWAY CONTAINER TRAFFIC

Kerala’s hinterland forms 64% of total export gateway traffic. For the purpose of analysis, Kerala is divided into three regions i.e. North Kerala, Central Kerala and South Kerala. Central Kerala has the highest share of 36% followed by South Kerala with 22% share and North Kerala with a share at 6%, as represented below:



**Figure 4-6 Share of Kerala gateway traffic based on Traffic Origination**

**Central Kerala:** Central Kerala, for the purpose of district wise analysis, comprises of Palakkad, Thrissur, Ernakulam and Idukki. Ernakulam district has the highest export share of 32% within Central Kerala, having 36% share. Ernakulam is followed by Palakkad & Thrissur with a share of 2% each followed by Idukki with 1% share, as shown below:



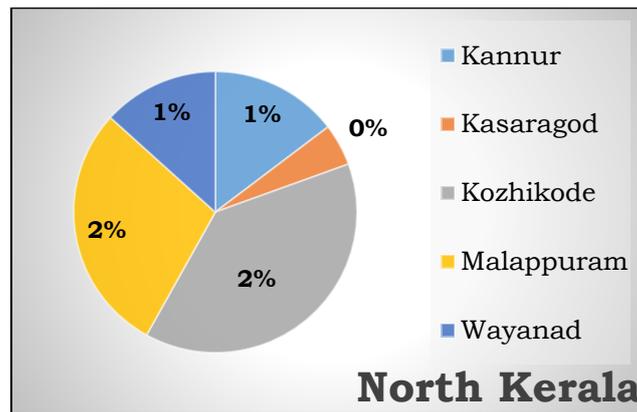
**Figure 4-7 Share of Central Kerala gateway traffic based on Origination**

**Table 4.2** below highlights the top 15 commodities in Central Kerala that contribute 21% of total export volumes.

**Table 4.2 Exports of Top 15 Commodities from Central Kerala**

Top 15 Commodity Name		
Tyres/Tubes	Plywood	Cotton Garments
Frozen Marine Foods	Coir Mats	Pepper
Tea	Rice	Frozen Yellow Tuna
Spices	Frozen Shrimps	Coconut Oil
Food Stuffs	Refractory Materials	Oleoresins Of Spices

**North Kerala:** North Kerala, for the purpose of district wise analysis, comprises of Kasaragod, Kannur, Wayanad, Kozhikode and Malappuram. Unlike Central Kerala, export share in North Kerala is more evenly distributed among all the districts except Kasaragod, as can be seen in the figure below:



**Figure 4-8 Share of North Kerala gateway traffic based on Origination**

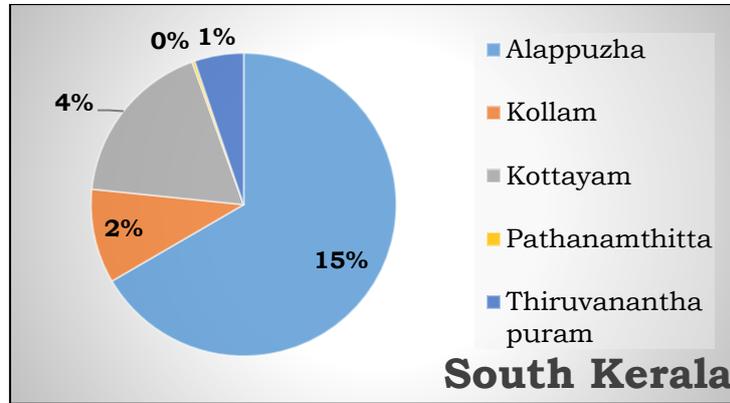
**Table 4.3** below highlights the top 15 commodities in North Kerala that contribute 5% of total export volumes.

**Table 4.3 Exports of Top 15 Commodities from North Kerala**

Top 15 Commodity Name		
Banana	Rice	Chappals
Food Stuffs	Steel Castings	Valves
Coffee	Hardboard	Cotton Garments
Plywood	Cotton Goods	Coconut Oil
Coconuts	Activated Carbon	Curry Powder

**South Kerala:** South Kerala, for the purpose of district wise analysis, comprises of Kottayam, Alappuzha, Pathanamthitta, Kollam and Thiruvananthapuram. Alappuzha district has the highest export share of 15% within South Kerala, having

22% share. Alappuzha is followed by Kottayam with a share of 4% followed by Kollam, Thiruvananthapuram with a share of 2% and 1% respectively, as shown below:



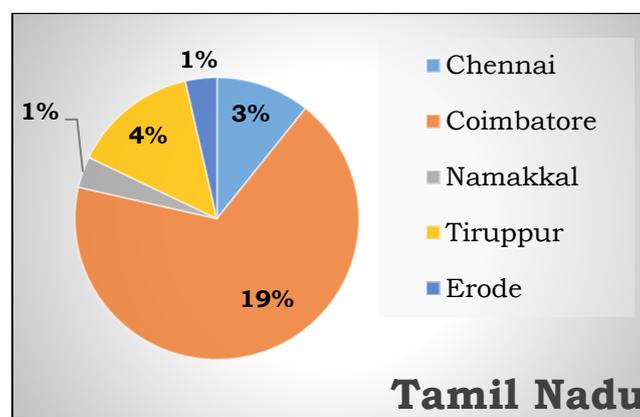
**Figure 4-9 Share of total South Kerala traffic based on Traffic Origination**

**Table 4.4** below highlights the top 15 commodities in South Kerala that contribute 18% of total export volumes.

**Table 4.4 Exports of Top 15 Commodities from South Kerala**

Top 15 Commodity Name		
Coir Mats	Frozen Yellow Tuna	Jute Matting
Frozen Marine Foods	Coir Geo Fabrics	Latex Gloves
Rubber Mats	Coconuts	PVC Tufted Coir Mats
Food Stuffs	Tyre Retreading Materials	Curled Coir
Cashew Kernels	Blood Bag	Coir Fiber

**Tamil Nadu:** In Tamil Nadu, majority share of traffic, for ICTT, originates from Western region. Coimbatore district has the highest export share of 19% within Tamil Nadu, having 30% share. Coimbatore is followed by Tiruppur with a share of 4% followed by Chennai, Erode and Namakkal, as shown in figure below:



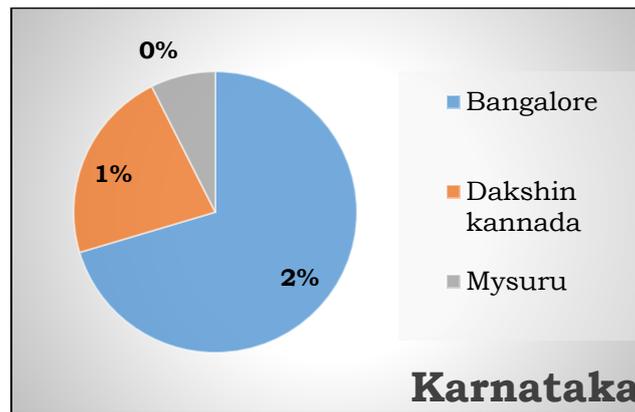
**Figure 4-10 Share of Tamil Nadu gateway traffic based on Traffic Origination**

**Table 4.5** below highlights the top 15 commodities in Tamil Nadu that contribute 26% of total export volumes.

**Table 4.5 Exports of Top 15 Commodities from Tamil Nadu**

Top 15 Commodity Name		
Coir Fiber	Cotton Yarn	Coconuts
Cotton Goods	Tyres/Tubes	Medical Equipment
Tea	Coir Pith	Valves
Cotton Garments	Eggs	Coir Mats
Textile Machinery	Paper	Banana

**Karnataka:** In Karnataka, majority share of traffic, for ICTT, originates from Southern region. Bangalore district has the highest export share of 2% within Karnataka, having 3% share. Bengaluru is followed by Dakshin Kannada and Mysuru, as shown in figure below:



**Figure 4-11 Share of Karnataka gateway traffic based on Traffic Origination**

**Table 4.6** below highlights the top 15 commodities in Karnataka that contribute 3% of total export volumes.

**Table 4.6 Exports of Top 15 Commodities from Karnataka**

Top 15 Commodity Name		
Fish Meal	Food Stuffs	Instant Coffee
P.P. Woven Bags	Electrical Items	Cotton Garments
Coffee	Gherkins In Brine	Fish Oil
Curry Powder	Cotton Goods	Furniture
Tea	Coconuts	Plywood

**Other States:** Majority of the export traffic that is handled by ICTT, originates from Kerala, Tamil Nadu and Karnataka. However, besides these three states, traffic also

originates from others states and has been categorised under others category. Total export contribution from other states is 3% in total export gateway traffic.

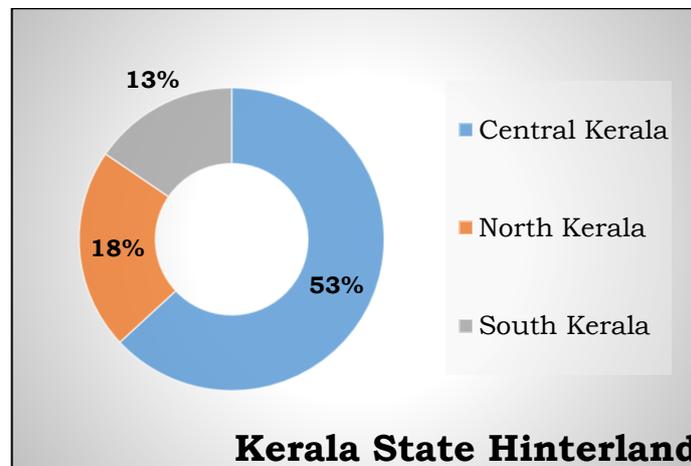
**Table 4.7** below highlights the top 15 commodities from other states that contribute 3% of total export volumes.

**Table 4.7 Exports of Top 15 Commodities from other states**

Top 15 Commodity Name		
Plywood	Rubber Mats	Rice
Ferric Chloride	Food Stuffs	Banana
Cotton Goods	Tea	Activated Carbon
Coconuts	Cotton Garments	Spices
Coir Mats	Coffee	Eggs

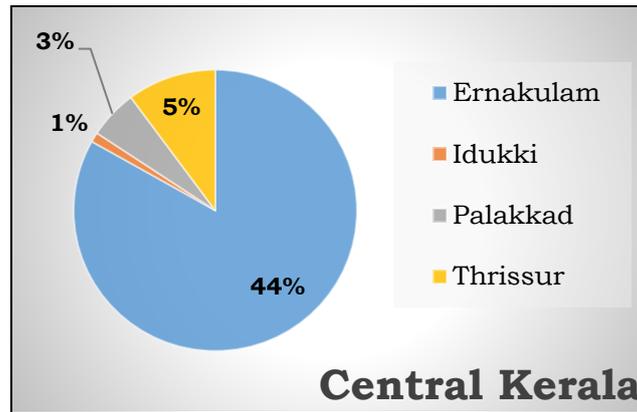
#### 4.2.2 IMPORT GATEWAY CONTAINER TRAFFIC

Kerala’s hinterland forms 85% of total import gateway traffic. Similar to export gateway traffic, Central Kerala has the highest share of 53%. However, unlike export gateway traffic, Central Kerala is followed by North Kerala with 18% share and South Kerala with a share of 13%, as represented below:



**Figure 4-12 Share of Kerala gateway traffic based on Destination**

**Central Kerala:** Ernakulam district has the highest import share of 44% within Central Kerala, having 53% share. Ernakulam is followed by Thrissur with a share of 5% followed by Palakkad and Idukki, as shown below:



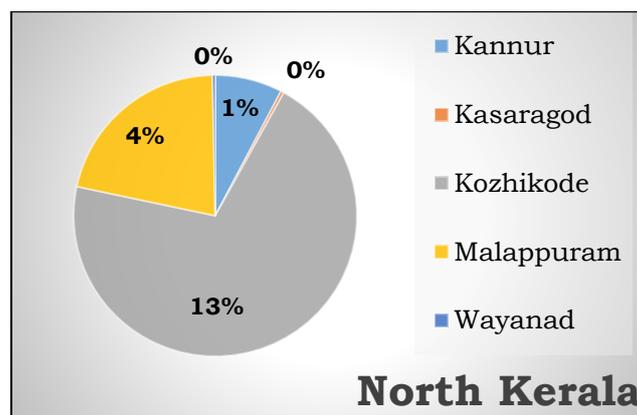
**Figure 4-13 Share of Central Kerala gateway traffic based on Destination**

**Table 4.8** below highlights the top 15 commodities in Central Kerala that contribute 27% of total import volumes.

**Table 4.8 Imports of Top 15 Commodities to Central Kerala**

Top 15 Commodity Name		
Veneers	Pepper	PVC Panels & Profiles/Sheets
White Cement	Apple	Calcium Carbonate
Galvanised Steel Section	Wood Logs	Aluminium Scrap
Quick Lime	Copra Expeller Cake	Hydrated Lime
Roof Tiles	Fibre Board	PVC Foam Board

**Northern Kerala:** Kozhikode has the highest import share of 13% within North Kerala, having 18% share. Kozhikode is followed by Malappuram with a share of 4% followed by Kannur, as shown below:



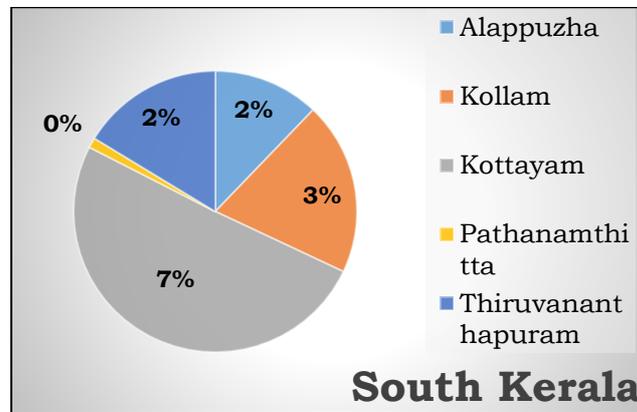
**Figure 4-14 Share of North Kerala gateway traffic based on Destination**

**Table 4.9** below highlights the top 15 commodities in North Kerala that contribute 14% of total import volumes.

**Table 4.9 Imports of Top 15 Commodities to North Kerala**

Top 15 Commodity Name		
Newsprint	PVC Foam Board	Wood Logs
HD Polyethylene	Heavy Melting Scrap	Gypsum Powder
LD Polyethylene	Silica Sand	Televisions
Roof Tiles	Suprasec	Furniture
Veneers	White Cement Clinker	PVC Resin

**South Kerala:** Kottayam has the highest import share of 7% within South Kerala, having 13% share. Kottayam is followed by Kollam with a share of 3% followed by Alappuzha, Thiruvananthapuram and Pathanamthitta, as shown below:



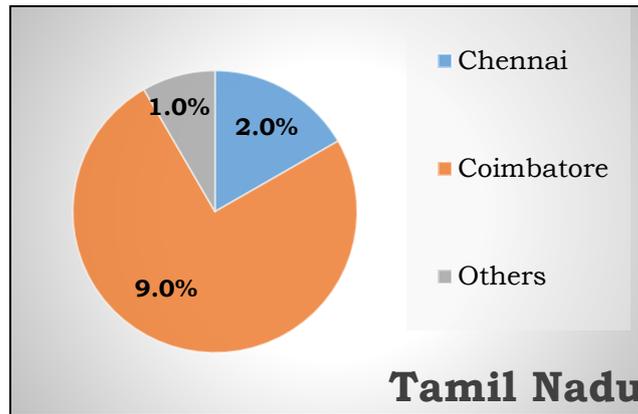
**Figure 4-15 Share of South Kerala gateway traffic based on Destination**

**Table 4.10** below highlights the top 15 commodities in South Kerala that contribute 10% of total import volumes.

**Table 4.10 Imports of Top 15 Commodities to South Kerala**

Top 15 Commodity Name		
Newsprint	Galvanised Steel Hollow Section	PVC Foam Board
Raw Cashewnuts	Roof Tiles	Cement
PVC Resin	Cashew Kernels	Jute Yarn
Apple	Rejected Paper	Veneers
Fibre Board	White Cement Clinker	PVC Compound

**Tamil Nadu:** Like export gateway traffic, majority share of import gateway traffic, for ICTT, is destined for Western region. Coimbatore district has the highest import share of 9% within Tamil Nadu, having 12% share. Coimbatore is followed by Chennai with a share of 2% followed by other districts in Tamil Nadu, as shown in figure below:



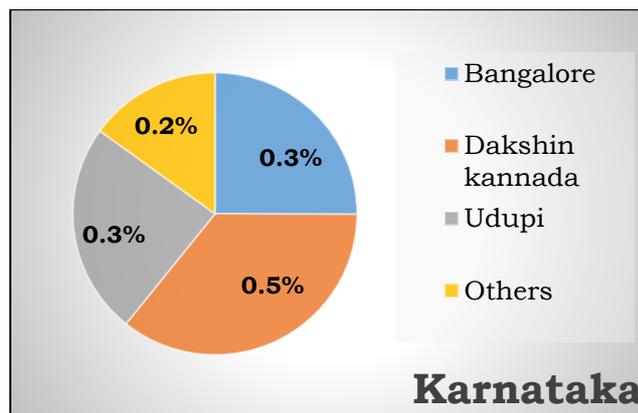
**Figure 4-16 Share of Tamil Nadu gateway traffic based on Destination**

**Table 4.11** below highlights the top 15 commodities in Tamil Nadu that contribute 8% of total import volumes.

**Table 4.11 Imports of Top 15 Commodities to Tamil Nadu**

Top 15 Commodity Name		
White Cement Clinker	Polybutadiene Rubber	Veneers
White Cement	Tea	Furniture
Lead Scrap	Oats	Roof Tiles
Gears	Silica Sand	HD Polyethylene
Quick Lime	Synthetic Rubber	Styrene Butadine Rubber

**Karnataka:** Import share in Karnataka is more evenly distributed among all the southern districts with Dakshin Kannada having share of 0.5% followed by 0.3% share of Bengaluru and Udipi each, as shown in figure below:



**Figure 4-17 Share of Karnataka gateway traffic based on Destination**

**Table 4.12** below highlights the top 15 commodities in Karnataka that contribute 1% of total import volumes.

**Table 4.12 Imports of Top 15 Commodities to Karnataka**

Top 15 Commodity Name		
Fish Meal	Turmeric	Lime Stone Powder
Veneers	HD Polyethylene	Plywood
Calcium Carbonate	Rejected Stock lot Of Paper	Roof Tiles
Soap Noodles	Fish Oil	Softwood Sulphate Pulp
Lead Ingots	Exercise Equipment	Gypsum Powder

**Other States:** Total import contribution from other states is 1% in total import gateway traffic.

**Table 4.13** below highlights the top 15 commodities from other states that contribute 1% of total import volumes.

**Table 4.13 Imports of Top 15 Commodities to other states**

Top 15 Commodity Name		
Bitumen	Iso Propyl Acetate	Coated Board
Pile Sheets	Pre-Painted Galvalume Coils	Oats
Apple	Oranges	Furniture
Escalator	Medical Reagent	Steel Plates
Thermal Paper	Machinery And Parts	Glass

### 4.2.3 Growth Outlook

#### 4.2.3.1 NITI Aayog's 'Vision for Viksit Bharat @ 2047

According to Economic Advisory Council to the Prime Minister (EAC-PM), Kerala's contribution to the national GDP rose from 3.4% in 1960-61 to 4.1% in 2000-01, but has since fallen to 3.8% in 2023-24.

An Approach Paper' envisions India as a developed country and has set target to become a USD 30 trillion economy by 2047. The paper highlights the necessity of avoiding the Middle-Income trap and achieving sustained GDP growth of 7-10% over the next 20-30 years. Based on NITI Aayog's vision and support from the following:

- Stakeholder Consultation
- Kerala Industrial Policy 2023
- Industrial Clusters/Parks proposed in the Primary Hinterland such as Smart City at Palakkad, Maritime Cluster near Cherthala

- Logistics Policy released in March 2024
- Investment Proposals worth INR 1.53 Lakh Crore been signed in Invest Kerala Global Summit 2025

the Consultant, even with conservative view, is confident that the share of Kerala in India's GDP will not fall further. Hence, in order to maintain its share, Kerala would at least grow at 7% for next 20-30 years.

#### 4.2.3.2 Potential 75 Products to Drive Exports Growth

In order to achieve the growth of 7% to 10%, Niti Aayog has identified 75 potential products. Currently, these 75 products contribute around USD 222 billion, which is around 50% of India's total exports. At the global level, these 75 products have significant presence in World exports, however, India's share of these 75 products is only 6% of the total World exports.

As a result, India has an outstanding opportunity to meet the tremendous demand of these items. Further, in approximately 50% of these products, India ranks in the top 10 producers in the World market. These products have the potential to enhance India's merchandise exports by USD 1 trillion by 2030 (CAGR growth of 28.5%), with the proper capacity building of manufacturers and States of such products.

**Table 4.14** below highlights the list of these 75 potential products.

**Table 4.14 List of Potential Products**

S. No	HS Code	Commodity
1	20230	Boneless
2	30617	Other Shrimps and Prawns : Frozen
3	90111	Coffee Neither Roasted nor Decaffeinated
4	100590	Other Maize (Corn)
5	100630	Semi/Wholly Milled Rice
6	170114	Other Cane Sugar
7	210690	Other Food Preparation
8	230400	Oil-Cake and Other Solid Residue
9	260111	Iron Ores
10	260112	Iron Ore and Concentrates Agglomerated
11	270799	Other Oil and Oil Products of Distillation Of high Temp Coal
12	271012	Light Oils and Preparations:
13	271019	Other Petroleum Oils and Oils Obtained
14	271600	Electrical Energy
15	290243	P-Xylene

S. No	HS Code	Commodity
16	293339	Other : Derivatives Of Pyridine
17	293359	Other Motorcycle Compounds Containing a Pyrimidine Ring
18	293399	Other Heterocyclic Compounds with Nitrogen Hetro Atom
19	293499	Other Heterocyclic Compounds
20	300220	*Vaccines For Human Medicine
21	300420	Other, Containing Antibiotics
22	300490	Other Medicine Put Up for Retail Sale
23	380893	Herbicides
24	390110	Polyethylene Having a Specific Gravity Below 0.94
25	390120	Polyethylene Having a Specific Gravity 0.94 /More
26	390210	Polypropylene
27	392190	Other Plates, Sheets, Films, Foils ,Strip Etc
28	392690	Other Articles of Plastics
29	401120	New Pneumatic Tyres Used on Buses/Lorries
30	420221	Handbags With Outer Surface of Leather of Composition
31	520100	Cotton
32	610910	T-Shirts Etc of Cotton
33	620342	Trousers Bib and Brace
34	630790	Other Made-Up Articles
35	640391	Other Ankle Covered Footwear
36	710231	Non-Industrial Diamonds
37	710239	Others :
38	711319	Articles Of Other Precious metal
39	720839	Flt-Rold Prdcts in Coils of a Thickness Of <3mm
40	730890	Other Structures and Parts of Structures Etc
41	732690	Other Articles of Heading
42	760110	Aluminium-Not Alloyed
43	760120	Aluminium Alloys
44	761699	Others Articles of Aluminium (Others).
45	840991	Parts Suitable Fr Use Solely/Princely with Spark-Ignition Internal Combustion
46	840999	Parts Of Other Engines(Deisel/Smi Deisel)
47	841112	Turbo-Jets of A Thrust>25 Kn
48	841391	Parts Of Pumps
49	841480	Other Pumps
50	841490	Parts Of Air/Vacuum Pumps, Compressors and Fans
51	843149	Other Machine Parts of Headings 8425 to 8430
52	847989	Other Machine and Mechanical Appliances
53	848180	Other Appliances :
54	848190	Parts Of the Items Under Heading 8481
55	848340	Gears And Gearing, Excel Toothed Wheels

S. No	HS Code	Commodity
56	850300	Parts Suitable for Use Solely/Principally
57	850440	Static Converters
58	851712	Telephones For Cellular Networks or For Other Wireless Networks
59	851762	Machines For the Reception
60	851770	Parts:
61	853710	Bords Etc For a Voltage<=1000 Volts
62	853890	Other Parts of Heading 8538
63	854449	Other Electric Conductors < 1000v Not Fitted with Connectors:
64	870321	Vehicle With Spark-Ignition Internal Combustion
65	870322	Vehicles With Spark-Ignition Internal Combustion
66	870323	Vehicles With Spark-Ignition Internal Combustion
67	870830	Brakes And Servo-Brakes
68	870850	Drive Axles
69	870899	Other Parts and accessors Of Vehicles of Heading 8701-8705
70	880100	Balloons And Dirigibles; Gliders, Hang Gliders and Other Non-Powered aircraft
71	890120	Tankers
72	901839	Catheters And the Like; Other Needles
73	901890	Other Instruments and appliances Of Medical Science
74	940360	Other Wooden Furniture
75	950300	Tricycles, Scooters, Pedal Cars

Of 75 potential products for boosting exports, the Consultant has identified 38 products that are currently being exported from Cochin Port. These commodities currently contribute 21% of total export from ICTT. The Consultant is of the opinion that these 38 commodities would contribute to higher growth in exports from ICTT compared to other commodities. The list of products is given in below **Table 4.15**:

**Table 4.15 List of Potential Commodities that contribute to exports growth from ICTT**

S. No	HS Code	Commodity
1	30617	Other Shrimps and Prawns : Frozen
2	90111	Coffee Neither Roasted nor Decaffeinated
3	100590	Other Maize (Corn)
4	100630	Semi/Wholly Miled Rice
5	170114	Other Cane Sugar
6	210690	Other Food Preparation
7	230400	Oil-Cake and Other Solid Residue
8	271012	Light Oils and Preparations:
9	271019	Other Petroleum Oils and Oils Obtained

S. No	HS Code	Commodity
10	300490	Other Medicine Put Up for Retail Sale
11	390110	Polyethylene Having a Specific Gravity Below 0.94
12	390120	Polyethylene Having a Specific Gravity 0.94 /More
13	390210	Polypropylene
14	392690	Other Articles of Plastics
15	401120	New Pneumatic Tyres Used on Buses/Lorries
16	420221	Handbags With Outer Surface of Leather of Composition
17	520100	Cotton
18	610910	T-Shirts Etc of Cotton
19	630790	Other Made-Up Articles
20	640391	Other Ankle Covered Footwear
21	730890	Other Structures and Parts of Structures Etc
22	732690	Other Articles of Heading
23	760110	Aluminium-Not Alloyed
24	760120	Aluminium Alloys
25	761699	Others Articles of Aluminium (Others).
26	840991	Parts Suitable Fr Use Solely/Principally with Spark-Ignition Internal Combustion
27	840999	Parts Of Other Engines(Deisel/Smi Diesel)
28	841391	Parts Of Pumps
29	841480	Other Pumps
30	841490	Parts Of Air/Vacuum Pumps, Compressors and Fans
31	848180	Other Appliances :
32	850440	Static Converters
33	853710	Bords Etc For a Voltage<=1000 Volts
34	854449	Other Electric Conductors < 1000v Not Fitted with Connectors:
35	870322	Vehicles With Spark-Ignition Internal Combustion
36	870323	Vehicles With Spark-Ignition Internal Combustion
37	870830	Brakes And Servo-Brakes
38	940360	Other Wooden Furniture

#### 4.2.3.3 NITI Aayog's EXIM Projections

India has climbed to 17<sup>th</sup> place among global merchandise exporters, with its share rising from 1.70% in 2014 to 1.82% in 2023. Despite global challenges, India's exports now span 115 countries, covering 46.5% of its portfolio, with major markets including the US, UAE, Netherlands, and China. While merchandise exports declined 3% to USD 437.1 billion in 2023-24, services exports grew to USD 341.1 billion, up from USD 325.3 billion in 2022-23, showcasing resilience and diversification in trade.

India's economic trajectory indicates significant growth potential, with projections placing the nation among the world's largest economies:

- Global Standing: By 2030, India is expected to surpass Germany, in GDP, to become the third largest economy in the World.
- Economic Projections:
  - S&P Ratings estimates India's nominal GDP to grow from USD 3.4 trillion in 2022 to USD 7.3 trillion by 2030.
  - NITI Aayog forecasts exports reaching USD 8.67 trillion and imports at USD 12.12 trillion by 2047, showcasing robust trade potential.

**Table 4.16 NITI Aayog's Export-Import Projection**

Indicator	Unit	2030	2040	2047
Export	USD Trillion	1.58	4.56	8.67
Import	USD Trillion	1.88	5.92	12.12

Expected Compound Annual Growth Rate (CAGR) of India's export and import targets for 2047, is just over 11% and 12% respectively, indicating robust growth in both trade categories over the coming decades.

#### **4.2.3.4 Pradhan Mantri Formalisation of Micro food processing Enterprises**

Ministry of Food Processing Industry (MoFPI) has launched the Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME) scheme under the Aatmanirbhar Bharat Abhiyan with the aim to enhance the competitiveness of existing individual micro-enterprises in the unorganized segment of the food processing industry and promote formalization of the sector. The scheme to be implemented over a period of five years from 2020-21 to 2024-25 with a total outlay of INR 10,000 crore. The scheme has a special focus on supporting Groups engaged in Agri-food processing such as Farmer Producer Organizations (FPOs), Self Help Groups (SHGs) and Producers Cooperatives along their entire value chain.

The **ODOP (One District One Product)** list pertaining to Kerala presented in below **Table 4.17** focuses on products like rice, pineapple, jackfruit, banana, products, spices, tapioca, milk, and coconut-based products. These products are the primary

focus for growth. By leveraging these products, Cochin and other districts can see improved growth rates through central government schemes and targeted support.

**Table 4.17 ODOP list pertaining to Kerala**

Sr. No	District	ODOP
1	Alappuzha	Rice Products
2	Ernakulam	Pineapple based Products
3	Idukki	Spices
4	Kannur	Coconut based products
5	Kasargod	Jackfruit based Products
6	Kollam	Tapioca & Tuber crop-based products
7	Kottayam	Coconut based products
8	Kozhikode	Coconut based products
9	Malappuram	Coconut based products
10	Palakkad	Banana based Products
11	Pathanamthitta	Jackfruit based Products
12	Thiruvananthapuram	Tapioca based products
13	Thrissur	Rice based Products
14	Wayanad	Milk based products

#### 4.2.3.5 Shift Towards Containerization

Shift towards containerization presents an opportunity for increased efficiency, cost-effectiveness and growth in trade volumes, further enhancing the export-import landscape. Certain commodities, traditionally transported in bulk or break-bulk modes, show promising potential for shifting to containerized transport to reduce spoilage and contamination. This trend could lead to significant additional growth in container traffic. Key commodities poised for this transition include:

- Cement
- Fertilizers
- Steel cargoes
- Foodgrains (rice, wheat, sugar, etc.)

#### **Sugar:**

The Government of India has allowed the export of 10 Lakh MT of sugar in year 2024-25. Maharashtra and Uttar Pradesh are the two largest producers of sugarcane and is poised to export 3.75 Lakh MT and 2.74 Lakh MT respectively.

Out of 10 Lakh MT allowed to be exported, mills established in Karnataka and Tamil Nadu can export 1.75 Lakh MT and 0.34 Lakh MT respectively.

Furthermore, Sugar export is highly containerized reaching up to containerization level of 80%. Countries on the western hemisphere, such as, Somalia, UAE, Sudan, Djibouti, Saudi Arabia and Iraq are among top 10 in terms of export value. Hence, ICTT can eye export from Karnataka and Tamil Nadu which are within the hinterland of Cochin Port.

#### **Rice:**

India produced 124 million MT of rice during 2023-24. West Bengal, Punjab and Uttar Pradesh states are largest producers of rice. Telangana, Andhra Pradesh, Tamil Nadu and Karnataka also have substantial share by producing 16.0 million MT, 7.7 million MT, 4.2 million MT and 2.6 million MT respectively.

India's Rice export stood at 16.3 million MT in year 2023-24. Countries to the western hemisphere, such as Saudi Arabia, Iran, Iraq, Benin, United Arab Emirates, Yemen, USA, Guinea, Senegal and Togo are among the top importers of rice from India. Hence, ICTT can attempt to capture export share from the Karnataka and Tamil Nadu.

#### **Other Commodities:**

On the import front, edible oils and pulses show overall potential for growth. However, based on historical performance, consumption patterns and established sourcing countries (such as Malaysia), there is little indication that these traffic volumes will shift towards Cochin. The established trade routes and supplier relationships are likely to maintain their current flow, limiting the diversion of these commodities to Cochin in the near future. Therefore, while there is potential, the actual impact on Cochin's import traffic may be minimal.

Inbound/Outbound of any of the above cargoes is limited to overall consumption potential of primary hinterland of Cochin port only.

#### **4.2.3.6 Railway Connectivity**

Rail connectivity of ICTT to the national rail network is from Vallarpadam to Edappally through an 8.86 km dedicated rail corridor. This corridor includes the longest railway bridge in India, spanning 4.62 km. The Vallarpadam rail link is critical to the operations of ICTT, as it is exclusively used for container traffic.

In the year 2021-22 around 2.9 million TEUs were moved in and out from ICDs across all major ports of India. This forms approximately 26% of total container traffic handled by all major ports in that year. In the year 2022-23, this share decreased to approximately 14% i.e. 1.6 million TEUs. Majority of the ICD traffic is generated by 4 major ports viz. Visakhapatnam, Chennai, JNPT and Kamarajar. Cochin port has moved 6162, 2395 and 356 containers to and from ICDs in the year 2021-22, 2022-23 and 2023-24. Ports such as VOC, NMPT and Mormugao have not moved any container to and from ICDs during these years.

Due to proximity (around 200 Km), traffic from Coimbatore ICD is getting catered by ICTT through Road. Due to similar reason, majority of Bangalore ICD traffic is getting catered by Chennai Port. However, DP World, is under negotiation with Indian Railways for rationalization of tariff in order to attract traffic from Bangalore ICD.

To increase container traffic and boost logistical effectiveness nationwide, the Ministry of Railways has unveiled new policy guidelines.

- Construction of dedicated container train terminals on Indian Railways properties.
- Entrance fee of Rs. 80,000 per train.
- Container Storage cost per TEU would be INR 35 per day
- Wharfage or ground usage fees will not be applicable
- 23 possible sites for these unique terminals around India
- Of these 23 locations, Mettur Dam and Salem Market in Salem District are well within the hinterland of Cochin Port Authority

#### **4.2.3.7 Industrial Clusters**

It is also seen that majority of the gateway growth is contributed by Central Kerala and majority of the Industrial Clusters and Industrial Parks are located/proposed to be located in Central Kerala and North Kerala with few in South Kerala.

- **Table 4.18** below highlights the details of industrial parks as per Kerala State Industrial Development.

**Table 4.18 Details of industrial parks as per Kerala State Industrial Development.**

Park	Park Type	District	Location	Units in Cluster
Industrial Growth Centre	Multi-product park	Alappuzha	South Kerala	31
Industrial Growth Centre	Multi-product park	Kannur	North Kerala	85
Industrial Growth Centre	Multi-product park	Kozhikode	North Kerala	61
Industrial Park	Coconut based Food Park	Kozhikode	North Kerala	Under Implementation
Mega Food Park	Sea Food Park	Alappuzha	South Kerala	31
Investment Zone	Multi-product park	Palakkad	Central Kerala	29
Business Park	Dairy & Food Packaging	Ernakulam	Central Kerala	2
Industrial Space	Multi-product park	Kasaragod	North Kerala	Under Implementation
Bio360 Life Sciences Park	Life Science/Bio Technology	Thiruvananthapuram	South Kerala	6

**Table 4.19** below highlights the details of industrial clusters as per Kerala Bureau of Industrial Promotion.

**Table 4.19 Details of industrial clusters as per Kerala Bureau of Industrial Promotion**

Cluster	District	Location	Units In Cluster
Rubber Cluster	Kottayam	South Kerala	52
Plastic Cluster	Ernakulam	Central Kerala	108
Plywood Manufactures Cluster	Ernakulam	Central Kerala	450
Furniture Cluster	Ernakulam	Central Kerala	450
Rice Millers Cluster	Ernakulam	Central Kerala	125
Wood Cluster	Malappuram	North Kerala	100
General Engineering Cluster	Malappuram	North Kerala	300
Terra Tile Cluster	Thrissur	Central Kerala	50

Cluster	District	Location	Units In Cluster
Wood Cluster	Kollam	South Kerala	120
Offset Printers Cluster	Kannur	North Kerala	245
Wood Furniture Cluster	Kannur	North Kerala	320
Furniture Cluster	Thrissur	Central Kerala	400

- New Industrial Clusters/Parks proposed
  - Smart City at Palakkad: The Economic Affairs Committee of the Union Cabinet has approved 12 industrial smart cities in 10 states, including Kerala. It has been decided to set up an industrial smart city at Pudukkottai near Palakkad. The Smart City is proposed to be built on 1,710 acres of land at the cost of INR 3,806 crore and will set the stage for an investment of INR 8,729 crore. According to Kerala State Industries Minister, P Rajeev, industrial ventures in food processing, pharmaceuticals, defence, aerospace and other sectors will emerge in Palakkad.
  - Industrial Corridor: NICDC has decided to extend Chennai-Bengaluru Industrial Corridor to Kochi via Coimbatore.
  - Maritime Cluster: First maritime cluster will come up on 15 acres of land near Cherthala

Logistics Policy: Draft Logistics Policy released in March, 2024 has proposed an investment subsidy of up to INR 7 crore for logistics park in the state.

#### 4.2.3.8 Impact of Shipping Lines

Consultant has analysed the volumes received by ICTT from Coastal Feeders, Foreign Feeders and Mainline Vessels.

**Table 4.20** below highlights the details of volume share shipping lines calling at ICTT.

**Table 4.20 Details of Shipping Lines (2024-25)**

Service Type	Service	Port Of Rotation	TEUs	% Share
Coastal Feeder	ADHOC	-	908	0.11%
	CCG	Mundra > Mangalore > Cochin > Colombo > Kattupalli > Visakhapatnam > Kattupalli > Colombo > Cochin > Mundra	1,13,257	13.55%
	PIC1	Mundra > Kandla > Pipavav > Cochin > Tuticorin > Mundra	68,729	8.23%
	SMILE	Cochin > Tuticorin > Mundra > Kandla > Cochin > Tuticorin	88,215	10.56%

	TCI COASTAL	[1] Kandla>Cochin>Tuticorin>Kandla [2] Kandla>Mangalore>Cochin>Kandla	88,168	10.55%
	WCC	Cochin>Mangalore>Hazira>Mundra>Hazira>Cochin	83,608	10.01%
	WEX	Chennai > Cochin > Jaigarh > Mundra	1,334	0.16%
	CTF	Cochin > Colombo > Mangalore >Cochin	511	0.06%
Foreign Feeder	ADHOC	-	41,815	5.00%
	CTF	Cochin > Colombo > Mangalore >Cochin	36,868	4.41%
	IMS		1,083	0.13%
	ISG	Chennai > Colombo >Cochin>Jebel Ali >Cochin>Colombo > Chennai	1,06,549	12.75%
	PIC2	Chennai > Krishnapatnam > Vizag > Tuticorin > Cochin >Karachi > Jebel Ali > Kandla > Chennai	21,203	2.54%
	SIG	Singapore > Nhava Sheva > Mundra > Dammam > Jabel Ali > Cochin > Colombo > Singapore	4,703	0.56%
	SMILE	Cochin>Tuticorin > Mundra >Kandla >Cochin>Tuticorin	3,375	0.40%
Mainline	ADHOC	-	82,753	9.90%
	CI2	Qingdao > Shanghai > Ningbo > Nansha > Port Klang > Nhava Sheva > Cochin > Port Klang > Qingdao	66,103	7.91%
	IEX	Vizag > Kattupalli > Colombo > Cochin > Valencia > Rotterdam > London Gateway > Hamburg > Antwerp > Le Havre > Colombo >Vizag	26,421	3.16%
<b>Total</b>			<b>8,35,603</b>	<b>100.00%</b>

### Observations:

- ✓ Two mainline vessels contribute to 11% of total cargo (8% from China service C12 - Port Klang, 3% from IEX Europe service - Columbo).
- ✓ 3 regular foreign feeder vessels contribute 20% of total cargo volume (ISG - Columbo, Jebel Ali and Chennai are about 13%, CTF - Mangalore and Columbo is about 4%, PIC2 - Jebel Ali and various Indian Ports) and rest of the feeders contribute about 1%.
- ✓ 5 out of 6 coastal feeder services are contributing about 53% of total cargo volume and the other service is almost Nil.
- ✓ The share of volume from regular service is 85% with rest 15% coming from Ad-hoc vessels (10% through mainline and 5% through foreign feeders). The contribution from only 5 foreign regular services (2 mainline and 3 feeder) and 5 coastal feeders are 84%.
- ✓ No mainline vessel is calling Jebel Ali - DP World terminal and almost 3 services contributing 15% of total volumes are calling Jebel Ali - DP World terminal.

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## Impact On Volumes:

Almost 98% of mainline foreign transshipment are ad hoc and now have an alternative port (Vizhinjam) to call which is more competitive in terms of costs, timelines and drafts etc. Vizhinjam is aggressively being positioned to target foreign transshipment cargoes only. The port has handled 4.92 lakh TEUs of transshipment volume up to March, 2025, since July, 2024 and is targeting a throughput of 5 million TEUs by 2028.

Other Indian Ports (Vizag, Kattupalli and Nhava Seva), being called by mainline vessels, have about 15.5 m draft. These mainline vessels are currently contributing about 11% of the total traffic (including coastal transshipment, coastal gateway import, foreign gateway). A dependency of 10% to 15% can be seen on coastal volume due to mainline vessels. The only feeder from Colombo which is giving almost 4% total cargo volume (both EXIM gateway and foreign transshipment) is connecting Mangalore and Cochin Port.

Vizhinjam would be well positioned to cater to this hinterland for gateway cargo besides having an eye on transshipment too. It can divert volumes from Cochin Port by offering discounted tariff. There is always a risk of losing business if lines have an option in the form of alternative port with equal or deeper draft, that too in nearby hinterland.

As per the stakeholder's interaction, ICTT has lost business from existing mainline service in the past due to unavailability of adequate draft at the port. The assessment is, there can be an impact between 25% to 30% on ICTT cargo volumes if it does not maintain at least 15.5 m draft as compared to other competing ports/other Indian ports in the lines' network.

### 4.3 GATEWAY TRAFFIC PROJECTIONS

Historically, the districts in the ICTT's hinterland have seen a weighted average growth in the range of 3.66% to 4.30% whereas average GDP growth rate of India, from 2013 to 2025, stands at 5.97%.

On account of factors such as Niti Aayog's vision for India for 2047 and contribution of Kerala in India's GDP; contribution of 75 export commodities identified by GoI with 38 commodities already being serviced by ICTT; Kerala Industrial Policy 2023; Invest

Kerala Global Summit 2025, there exists a potential for ICTT’s hinterland gateway traffic to grow at a rate of 7%.

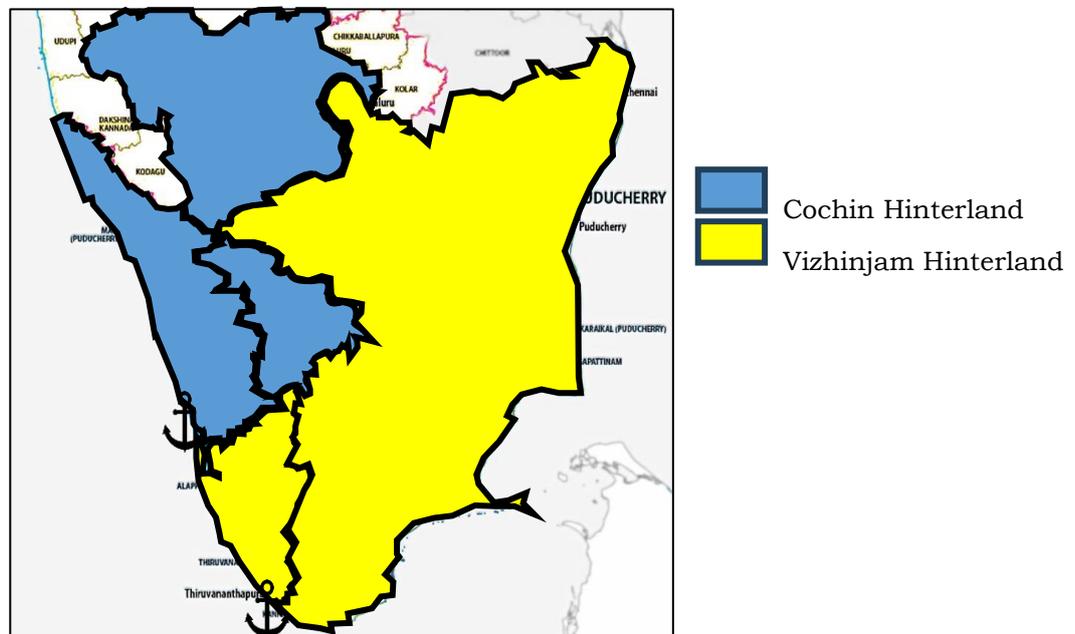
However, the Consultant has taken a conservative view and projected the traffic to grow at India's historical GDP growth of 5.97% but only if the draft is increased to 16.0 M. In absence of increase in draft, the Consultant expect an impact on traffic between 30% to 35%, with growth slowing down to historical ICTT's hinterland growth between 3.66% and 4.30%. The reason can be attributed to gradual diversion of mainline vessels to competitive ports.

For the purpose of projection of future traffic, it is assumed that after completion of dredging works undertaken for 16.0 M draft, incremental traffic will be realized in FY 2028-29.

#### 4.3.1 REALISTIC SCENARIO

Under Realistic Scenario, it is assumed that Vizhinjam Port would attempt to capture as much hinterland via road & rail, at its published tariff, considering cost advantage over ICTT. Balance hinterland would be catered via Coastal Transshipment to ICTT.

Considering the historical growth of hinterland districts, to be catered via coastal



**Figure 4-18 Realistic ICTT Hinterland**

transshipment, ICTT would be able to cater to 69% of Export Hinterland and 82% of Import Hinterland traffic, based on integrated logistics cost analysis (**ANNEXURE -**

**INTEGRATED LOGISTICS COST ANALYSIS**) from hinterland districts. With a volume discount up to 85% on VRC, ICTT would be able to cater to 70% of Export Hinterland and 82% of Import Hinterland traffic.

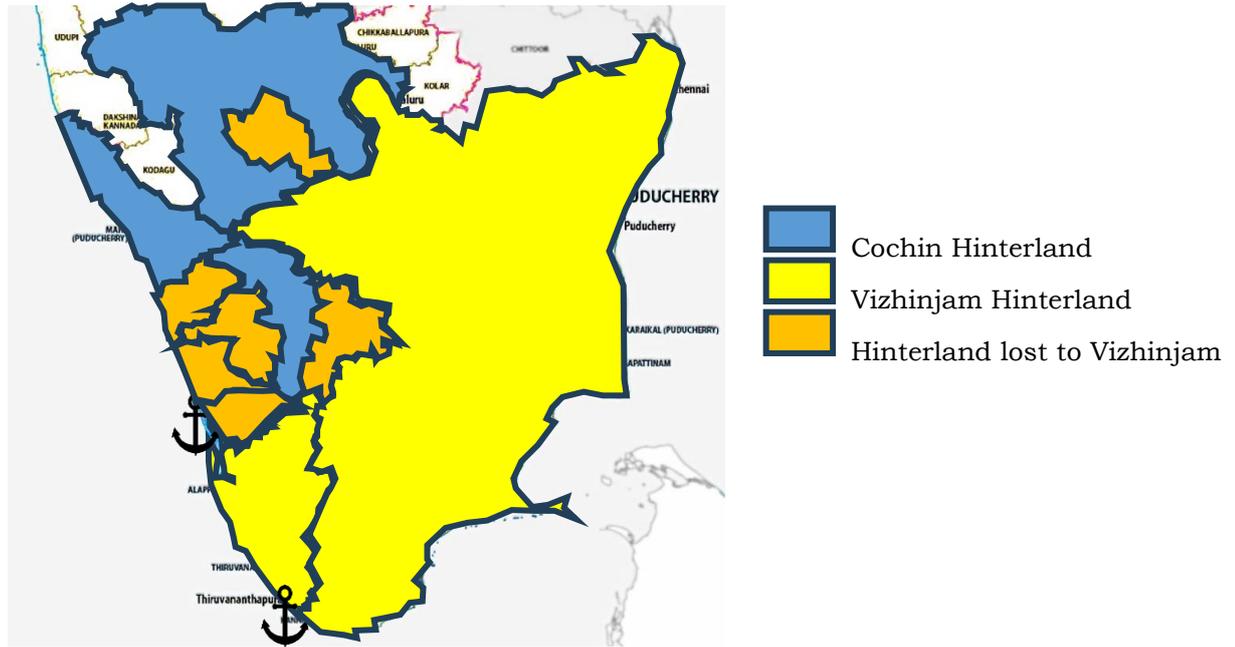
The projected future traffic up to year 2042-43 is shown in **Table 4.21** below:

**Table 4.21 Projected Future Traffic up to year 2042-43 in Realistic Scenario**

Year	16 M Draft ('000 TEUs)	14.5 M Draft ('000 TEUs)
2025-26	669	669
2026-27	505	505
2027-28	535	525
2028-29	567	545
2029-30	600	567
2034-35	802	688
2039-40	1,072	836
2042-43	1,276	939

#### 4.3.2 PESSIMISTIC SCENARIO

Under Pessimistic Scenario, it is assumed that Vizhinjam Port would attempt to capture maximum possible hinterland via road & rail, by reducing its Tariff between 25% and 50% over the published one. Balance hinterland would be catered via Coastal Transshipment to ICTT.



**Figure 4-19 Pessimistic ICTT Hinterland**

Considering the historical growth of hinterland districts, to be catered via coastal transshipment, ICTT would retain its share, as envisaged under Realistic Scenario, if Tariff is reduced up to 25%. However, with reduction in Tariff up to 50%, ICTT would be able to cater to 28% of Export Hinterland and 25% of Import Hinterland, based on integrated logistics cost analysis (**ANNEXURE - INTEGRATED LOGISTICS COST ANALYSIS**) from hinterland districts.

The projected future traffic up to year 2042-43 is shown in **Table 4.22** below:

**Table 4.22 Projected Future Traffic up to year 2042-43 in Pessimistic Scenario**

Year	16 M Draft ('000 TEUs)	14.5 M Draft ('000 TEUs)
2025-26	669	669
2026-27	162	162
2027-28	173	168
2028-29	185	174
2029-30	198	180
2034-35	278	214
2039-40	390	255
2042-43	478	284

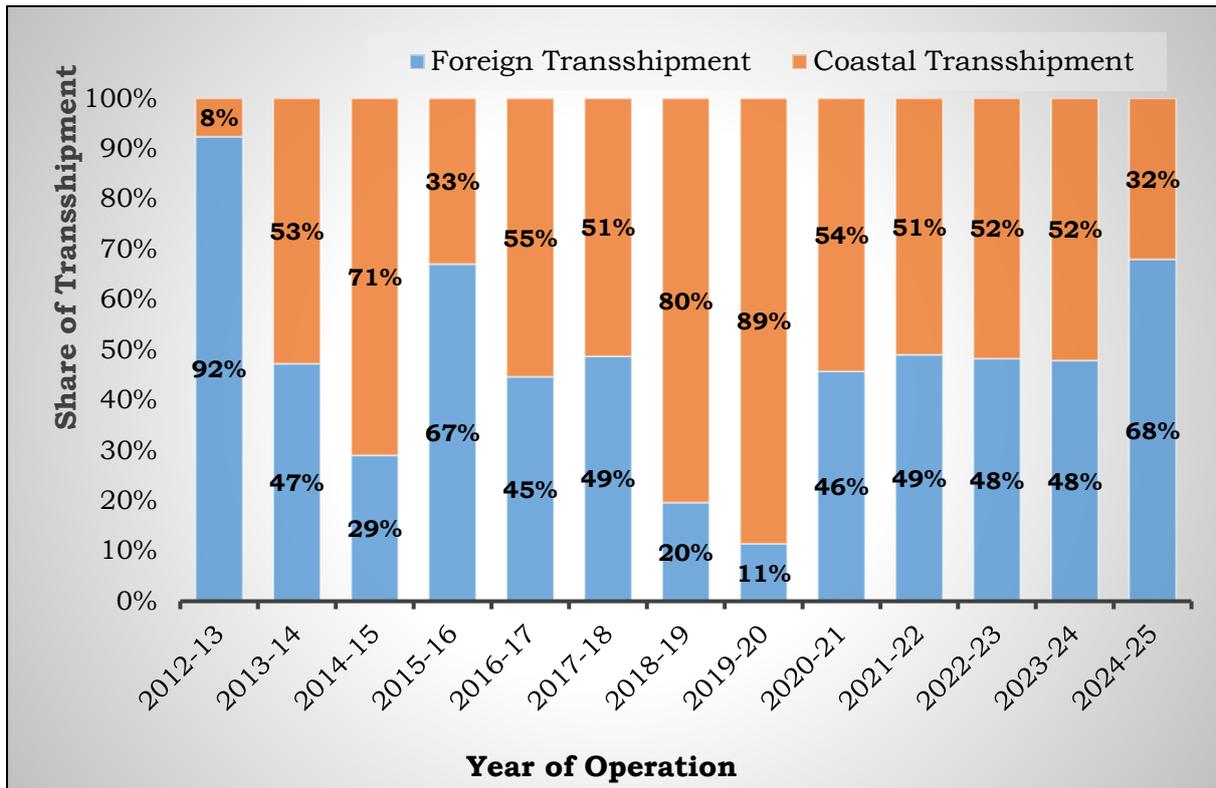
#### 4.4 TRANSSHIPMENT CONTAINER TRAFFIC

The ICTT Terminal of Cochin Port handled 0.84 MTEUs of container traffic in financial year 2024-25. The transshipment traffic accounted for 0.17 MTEUs or 20% of total traffic. The historical details of transshipment traffic since financial year 2012-13 is produced in **Table 4.23** below:

**Table 4.23 Historical Transshipment Traffic (in '000 TEUs)**

Year	Foreign Transshipment	Coastal Transshipment	Total Transshipment
2012-13	7	1	7
2013-14	13	14	27
2014-15	5	12	17
2015-16	14	7	21
2016-17	14	17	31
2017-18	17	18	35
2018-19	6	24	30
2019-20	4	32	36
2020-21	40	47	87
2021-22	77	80	156
2022-23	51	54	105
2023-24	50	55	105
2024-25	115	55	170

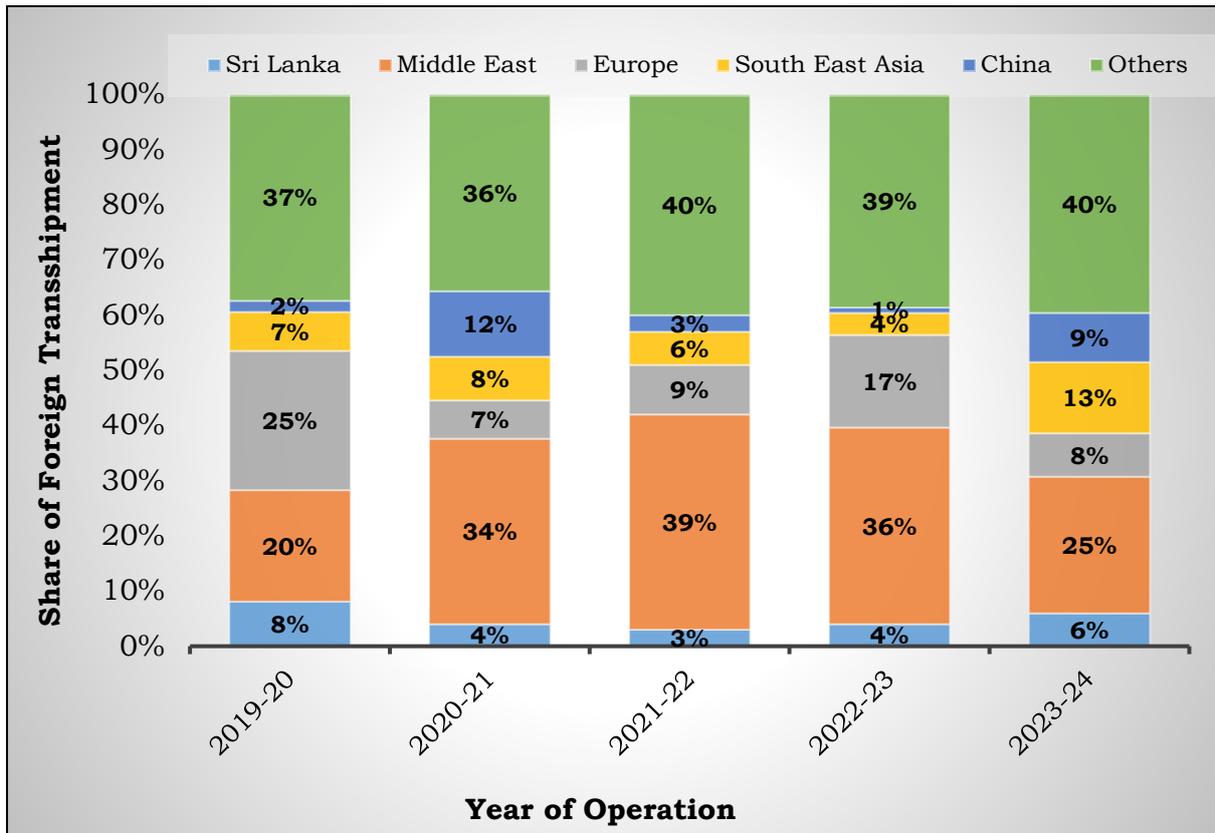
The transshipment traffic has grown at CAGR of 29.8% between 2012-13 and 2024-25 with foreign transshipment traffic growing at 26.5% and coastal transshipment traffic at 46.3%. The share of coastal transshipment, since 2012-13, has been increasing to reach a share of 89% in 2019-20. However, the share of foreign transshipment spiked from 11% in 2019-20 to 46% in 2020-21 and remained close to 50% since then. Historical share of foreign to coastal transshipment traffic is represented in **Figure 4-20** below:



**Figure 4-20 Historical share of foreign to coastal transshipment traffic**

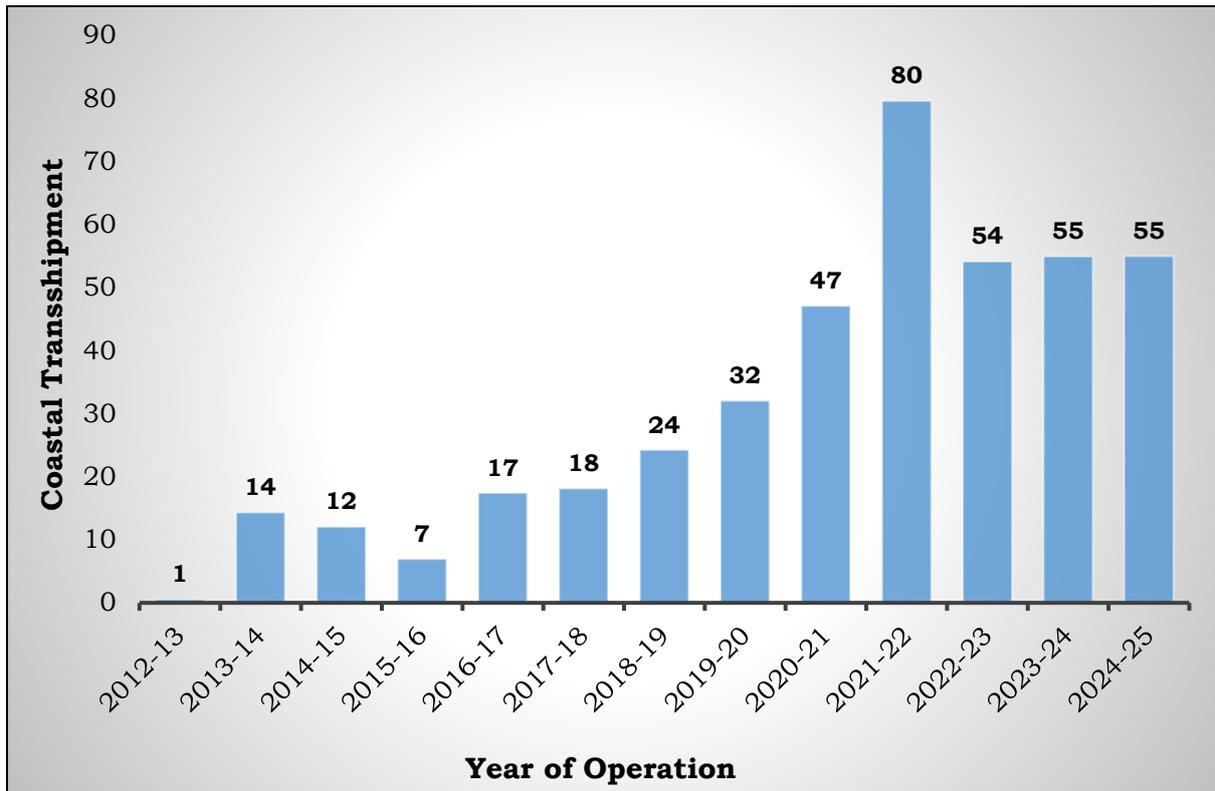
The spike in foreign transshipment traffic post 2019-20 is due to diversion of transshipment traffic from Sri Lanka on account of pandemic. The share of foreign transshipment traffic remained close to 50%, in subsequent years, as pandemic was followed by economic crises in Sri Lanka which is followed by congestion at Colombo Port due to Red Sea crises. In 2024-25, foreign transshipment traffic has reached 68% share.

One-fourth of the foreign transshipment traffic is from/to Middle East. Middle East is followed by South East Asia, China, Europe, Sri Lanka and others. Historical share of foreign transshipment traffic is represented in **Figure 4-21** below



**Figure 4-21 Historical share of foreign transshipment traffic**

Cochin Port is also used as transshipment hub by ports in the western coast to transfer goods to ports in the eastern coast and vice versa. Historical growth in coastal transshipment traffic is represented in **Figure 4-22** below:



**Figure 4-22 Historical growth in coastal transshipment traffic**

Foreign Transshipment traffic, in the year 2024-25 has grown at historical record to reach 114,962 TEUs. This is due to congestion at Colombo Port on account of Red Sea crises. However, with current draft of 14.5 m, the growth on the back of congestion at Colombo Port is not sustainable. Moreover, congestion at Colombo Port, in future, is also not sustainable due to following reasons:

- Vizhinjam Port
  - Aggressive plans of Vizhinjam Port, which has already handled more than 4.92 lakh TEUs from July’24 till Mar’25. The Port has advanced Phase III with Phase II that will commence operations by 2028.
  - MSC, the world’s largest shipping company, has tied up with Vizhinjam Port, with majority of the vessels coming onto it. Reports indicate that Maersk has already devised network revamp plan to shift some of its transshipment calls for Indian cargo, to Vizhinjam Port. Several other companies have also expressed interest in utilizing Vizhinjam for transshipment. Deeper draft is one of the significant reasons for the shipping companies in exhibiting interest in Vizhinjam.
- Colombo Port

- Due to diversion of Indian cargo to Vizhinjam and ICTT, congestion at Colombo Port would reduce.
- Expansion plans of Colombo Port with commencement of operations at WCT 1 and ECT that will increase capacity by 6.5 million TEUs by 2025 and commencement of operations at WCT 2 and NCT that will increase capacity by additional 7 million TEUs by 2030.
- VO Chidambaranar Port
  - The construction of VO Chidambaranar Port outer harbour with a draft of 16 m and capacity of 4 MTEUs, is proposed to be commenced. Phase I with capacity of 2 MTEUs is due for completion within 36 months. This project would not only further reduce congestion at Colombo Port but also generate additional competition for Cochin Port, with lesser draft.
- Galathea Bay Port
  - Galathea Bay Port, with a natural draft of 20 m, is envisaged to be have capacity of 16 MTEUs. Phase I, with a capacity of 4 MTEUs, is expected to be completed by 2028.
  - The Port, located 40 nautical miles from international shipping route, would be a mega transshipment port, catering to entire east coast of India and Bangladesh. This project would significantly reduce congestion at Colombo Port, currently acting as a transshipment port to entire east coast of India and Bangladesh.

### **Attraction for Anchor Shipping:**

The container shipping market is expected to grow at 4-5% annually through 2027, fuelled by e-commerce, improved logistics, and the adoption of larger, more efficient vessels

Largest Container Shipping Companies as of February 2024:

1. MSC (Switzerland) – 5.7 million TEU, 801 ships, 19.9% market share.
2. Maersk (Denmark) – 4.2 million TEU, 685 ships, 14.6% market share.
3. CMA CGM (France) – 3.6 million TEU, 634 ships, 12.7% market share.
4. COSCO (China) – 3.1 million TEU, 491 ships, 10.8% market share.

**MSC in India:** MSC has significantly increased its footprint in V.O. Chidambaranar Port through its strong position at the Dakshin Bharat Gateway Terminal (DBGT). DBGT handles 75% of the container volumes at V.O. Chidambaranar Port. The

terminal feeds cargo through Colombo. MSC has also increased its presence along India's southeastern corridor by acquiring a 49% stake in the Adani Ennore Container Terminal (AECTPL) for INR 247 crore. MSC's partnerships with Adani Ports at key terminals further bolster its influence in India. At Mundra Port, MSC operates the Adani International Container Terminal through a joint venture, making it India's busiest private port.

MSC has included the Vizhinjam International Seaport in its Jade service, which will connect the Vizhinjam Port in India with the leading ports in the world on a rotation basis. There is a strategic partnership where MSC is a significant customer and anchor shipper, receiving ultra-large container vessels at the Vizhinjam Port to develop it as a regional transshipment hub. The MSC has a cargo transportation system connecting more than 155 countries through more than 260 trade routes. The Jade Service is one of the main services on a shipping route from Europe to Asia, which circumnavigates the Cape of Good Hope in South Africa, MSC's main cargo route. This service connects Qingdao Port in China, Busan Port in South Korea, Ningbo-Zhoushan Port in China, Shanghai Port in China, Yantian Port in China, the Port of Singapore, the Port of Valencia in Spain, the Port of Barcelona in Spain, and the Port of Gioia Tauro in Italy.

**Maersk:** Tanjung Pelepas could not have competed with Singapore, which is one of the world's largest transshipment hubs. Hence, Pelepas gave Maersk Line a Royal package and Maersk shifted to Pelepas as its transshipment hub. Once they moved to Pelepas, a few of its service partners also shifted to Pelepas.

**CMA CGM:** CMA CGM has invested in key land-side infrastructure, such as the Jawaharlal Nehru Port (JNPA) terminal in India and Inland Container Depots (ICDs) like in Mundra. CMA CGM's expansion strategy focuses on both fleet modernization and infrastructure investments to position itself as the largest shipping line by 2030. CMA CGM and DP World have introduced a block train service from the NCR to Mundra Port. Keeping in view CMA CGM's expansion strategy which focuses on both fleet modernization and infrastructure investments to position itself as the largest shipping line by 2030 and strategic partnership with DP World in past, CMA CGM can be explored as anchor shipping line.

Like Pelepas, Anchor Shipping Line can also bring along, other partners. Hence, CoPA can offer following incentive to Anchor Shipping Line

- Priority Berthing

The ability of the port to offer priority berthing compensates for any time delays and cost over-runs due to pre-berthing delays or operational inefficiencies. This will help shipping line to minimize uncertainties/liabilities.

- Special Deep Discount in Tariff
- Cater to all its needs

Apart from incentives mentioned above, Cochin Port needs to increase its draft beyond 15.5 m in order to be competitive and attract global shipping lines, having vessels requiring deeper draft. Cochin Port can also adopt sustainable practices that align with international green shipping goals. Key strategies include:

**1. Shore Power (Cold Ironing):** Reduces emissions by enabling vessels to use onshore electricity instead of auxiliary engines.

**Action:** Install shore power at key berths, offer incentives, and collaborate with Kerala State Electricity Board for renewable energy. (*Example: Ports of Los Angeles & Singapore*).

**2. LNG & Green Fuel Bunkering:** Shipping lines are accelerating carbon reduction initiatives in response to IMO regulations, the EU Fit for 55 package, and corporate sustainability commitments. Key emission targets include:

- IMO GHG Strategy 2023 (Global)
  - 2030: 40% reduction in CO<sub>2</sub> emissions per transport work (vs. 2008).
  - 2040: 70% absolute GHG reduction.
  - 2050: Net-zero emissions.  
Implications: Ships must comply with EEXI & CII standards, adopt alternative fuels (LNG, biofuels, ammonia, methanol), and leverage port incentives for low-emission operations.
- EU ETS & Fit for 55 (Europe-Specific)
  - 2024: Shipping included in the EU Emissions Trading System (ETS).
  - 2025: Fuel EU Maritime sets carbon intensity limits for ships at EU ports.
  - Cost Impact: Ships must pay for 50% of emissions on EU-bound voyages and 100% of intra-EU emissions.

- Port-Level Carbon Reduction Initiatives
  - Rotterdam, Singapore, Los Angeles, Antwerp: Discounts for low-emission ships.
  - Shanghai, Shenzhen: Shore power mandates to cut emissions at berth.
  - Singapore Green Port Program: Incentives for LNG and biofuel adoption.
- Shipping Line Sustainability Targets
  - Maersk: Net-zero by 2040, first green methanol-powered ships by 2024.
  - MSC: Net-zero by 2050, investing in alternative fuels.
  - CMA CGM: 30% carbon intensity reduction by 2030 (vs. 2019).
  - Hapag-Lloyd: Net-zero by 2045.

By aligning with these frameworks, ports and shipping lines are driving the transition toward a sustainable maritime future.

**Action:** Establish LNG, methanol, and ammonia bunkering to support IMO 2050 targets. Develop infrastructure with Indian Oil & Petronet LNG, offer green fuel discounts. *(Example: Singapore & Rotterdam).*

- 3. Green Tariff Incentives:** Attract low-emission ships by offering discounts on port dues based on Environmental Ship Index (ESI) scores and preferential berthing. *(Example: Antwerp & Hamburg).*
- 4. Renewable Energy for Port Operations:** Expand solar, wind, and hybrid-powered port equipment to reduce carbon footprint. *(Example: DP World Jebel Ali & Port of Los Angeles).*
- 5. Smart Digitalization:** AI-driven berth scheduling, blockchain-based green cargo tracking, and paperless operations to optimize efficiency and reduce emissions. *(Example: Rotterdam).*
- 6. Carbon Offsetting & Blue Economy:** Initiate mangrove reforestation, carbon credits for shipping lines, and marine conservation partnerships. *(Example: Port of Singapore).*

**7. Green Transshipment Hub Positioning:** Market Cochin as India's first Green Transshipment Gateway, promoting zero-carbon logistics corridors and green vessel incentives. (Example: Gothenburg).

### Competitive Advantage for Cochin Port

- ✓ Attract global shipping lines with sustainable port solutions.
- ✓ Position itself as a green transshipment alternative to Colombo.
- ✓ Boost competitiveness under India's Green Ports Policy.
- ✓ Secure carbon credits & green financing for future expansion.

By embracing these initiatives, Cochin Port can enhance its global standing and become a leader in sustainable maritime logistics.

#### 4.4.1 Shipping Line Services and US/Europe Trade

**Shipping Line Services:** Consultant has analysed transshipment volume data of the few shipping line service which stopped calling at ICTT.

**Table 4.24 Analysis of Shipping Line Services**

Service Name	Route	Sector	Stopped Year	Transshipment Volume In TEUs (P.A)	No of Calls
NEMO	Chennai-Colombo-Cochin-Europe	Service ceased in 2019 due to <b>infrastructure constraints, following an upgrade to 15.5 m draft vessels with MSC joining the service</b> (e.g., MSC Abidjan).	Stopped in 2019	2,458	47
WIS-E	ME-COK-CMB-ME	TP service connecting East Coast India volumes to the Middle East (via transshipment at Cochin) and vice versa.	Started in 2021 and stopped in 2023. In 2022, handled 78k TEUs, including 34k TEUs of transshipment cargo.	34,150	46

WIS-W	ME-COK-CMB-ME	TP service connecting East Coast India volumes to the Middle East (via transshipment at Cochin) and vice versa.	Started in 2022 and stopped in 2023. In 2023, handled 25k TEUs, including 5k TEUs of transshipment cargo.	5,390	37
IEX	Chennai-Colombo-Cochin-Europe	Europe service commenced in 2019 and ceased in Jan 2025 <b>due to infrastructure constraints, following the upgrade to 15.5 m draft vessels / 337 m LOA</b> (e.g., MAERSK GUATEMALA).	stopped in Jan 2025	711	45
GLX-E	ME-COK-FE	Far East service connecting cargo FROM Middle East; started in 2016 stopped in 2019	TS vols handled 7K TEUs (total service handled 35K TEUs in 2017; started in 2016 stopped in 2018	7,090	40
GLX-W	FE-COK-ME	Far East service connecting cargo to Middle East; started in 2016 stopped in 2019	Total service handled 29k TEUs in 2018. started in 2016 stopped in 2018	2,560	44
SIG	ME-COK-CMB-SINGAPORE	COK-Singapore direct connectivity vessel	stopped in 2024	17	20
<b>Total</b>				<b>52,376</b>	<b>279</b>

It is understood from the table above that, ICTT in the previous years has lost IEX service due to constraint in availability of adequate draft. Prior to that, WIS-E and WIS-W, which accounted for approx. 39,000 TEUs of transshipment traffic have stopped calling Cochin Port due to various reasons. Similarly, NEMO service also stopped calling Cochin Port due to unavailability of adequate draft. Overall, there is a loss of more than 50,000 TEUs of transshipment volume.

**US/Europe Trade:** Following consultations with various stakeholders, it is understood that trade between India and US, Europe, Africa & Far-East is currently being facilitated through major Indian ports including Paradip, Visakhapatnam, Chennai, Gangavaram, Kakinada, Kolkata, Krishnapatnam, Mangalore, and Tuticorin. These ports collectively handle an estimated container volume of approximately 16 Lakh TEUs, representing significant transshipment potential.

A tie-up with any one of the top 3 shipping lines has potential to divert at least 25% of the traffic to ICTT - equivalent to around 4 Lakhs TEUS.

Out of 4 Lakh TEUs potential, if the anchor shipping line diverts even 50% of its share to ICTT, it would give Cochin Port an annual transshipment traffic of at least 2 Lakh TEUs.

#### **4.4.2 FOREIGN TRANSSHIPMENT**

The Consultant held detailed discussion with shipping lines who have strongly vouched for increase in draft from 14.5m to 16.0m, and if possible, increase the draft at par with Colombo Port and/or Vizhinjam Port in order to consider Cochin for transshipment cargo. As per Clarkson's research, a draft of 14.5 m can accommodate fully loaded vessel of up to 10,000 TEUs. An increased draft of 1.5 m to 16.0 m (an increase of 10%) can accommodate a fully loaded vessel of up to 14,000 TEUs (an increase of 40%). In 2024, there's a significant increase in large vessel orders, with 45% of new ships in the Neo-Panamax category (12,500–18,000 TEU), and 20% for ULCVs. These vessel orders are primarily to cater to transshipment traffic.

Though, ICTT was proposed as a Transshipment Hub, however, the same has majorly catered to gateway traffic. Hence, a reference to other Transshipment Hub such as Singapore, Klang and Colombo cannot be used to forecast transshipment traffic of ICTT.

The Consultant has observed that average of past five years of foreign transshipment to foreign gateway is 20%. It is also observed that transshipment share at Mundra Port is 23%. In light of above, the Consultant is of the opinion that though, ICTT achieved record foreign transshipment volumes in 2024-25, however, the future traffic is dependent on the proposal to increase the draft.

Without increase in draft and on the back of gateway traffic strength, the Consultant estimates that share of foreign transshipment in future would be at par with its five-year average which also is close to Mundra's share.

Increasing the draft to 16.0 M will not only help the ICTT in bring back the cargo lost (~ 50,000 TEUs) due to infrastructure constraints at ICTT but will also help ICTT tie-up with an Anchor shipping line and fetch ~2,00,000 TEUs of transshipment volume as mentioned in the section 4.4.1 above.

Hence, an estimated 2.5 Lakhs incremental TEUs is expected from historical loss and upcoming tie-up with anchor shipping line. The incremental TEUs is over and above historical 5-year average trend of Transshipment over Gateway.

For the purpose of projection of future traffic, it is assumed that incremental traffic, recovered from lost services and new cargo captured from US, Europe, Africa and Far-East trade at various other ports as mentioned above, will be realized in FY 2028-29. Traffic projected for foreign transshipment with and without increase in draft is as follows:

**Table 4.25 Foreign Transshipment Traffic in Realistic Scenario**

Realistic Scenario		
Year	With 16.0 m draft ('000 TEUs)	With 14.5 m draft ('000 TEUs)
2025-26	67	67
2026-27	55	55
2027-28	58	57
2028-29	311	59
2029-30	315	62
2034-35	337	75
2039-40	366	91
2042-43	388	102

**Table 4.26 Foreign Transshipment Traffic in Pessimistic Scenario**

Pessimistic Scenario		
Year	With 16.0 m draft ('000 TEUs)	With 14.5 m draft ('000 TEUs)
2025-26	67	67
2026-27	18	18

2027-28	19	18
2028-29	270	19
2029-30	272	20
2034-35	280	24
2039-40	293	28
2042-43	302	31

#### 4.4.3 COASTAL TRANSSHIPMENT

The Coastal Transshipment traffic has gradually increased since inception, which has improved its share in total transshipment traffic. According to an opinion, expressed by a shipping line in media, Vizhinjam Port, with deeper draft, would focus in attracting Indian cargo from competitive foreign transshipment ports. Moreover, based on discussion with various stakeholders, Coastal Transshipment is undertaken on smaller vessels. Catering to Coastal Transshipment would bring unwanted congestion at Vizhinjam Port.

Majority of Coastal Transshipment, at Cochin, has co-relation with Foreign Transshipment. Most of the Containers from Foreign Source and destined for Indian Port is captured in Foreign Transshipment & Coastal Transshipment volumes and vice-versa.

Hence for Coastal Transshipment to increase, factors required for increase in Foreign Transshipment also apply.

Traffic projected for coastal transshipment with and without increase in draft is as follows:

**Table 4.27 Coastal Transshipment Traffic in Realistic Scenario**

Realistic Scenario		
Year	With 16.0 m draft ('000 TEUs)	With 14.5 m draft ('000 TEUs)
2025-26	36	36
2026-27	47	47
2027-28	50	49
2028-29	303	51
2029-30	306	53
2034-35	325	64

2039-40	350	78
2042-43	369	87

**Table 4.28 Coastal Transshipment Traffic in Pessimistic Scenario**

Pessimistic Scenario		
Year	With 16.0 m draft ('000 TEUs)	With 14.5 m draft ('000 TEUs)
2025-26	36	36
2026-27	15	15
2027-28	16	15
2028-29	267	16
2029-30	268	17
2034-35	276	20
2039-40	286	23
2042-43	294	26

#### 4.5 TOTAL PROJECTED ICTT VOLUMES

The Consultant has divided its analysis of ICTT traffic around gateway traffic, foreign transshipment traffic and coastal transshipment traffic. Traffic outlook of gateway traffic is dependent on growth of hinterland traffic which in turn is majorly dependent on growth in Kerala, Tamil Nadu and Karnataka. Traffic outlook of foreign transshipment traffic and foreign gateway through mainline vessels is dependent on increase in draft. In fact, strength of foreign gateway traffic would be used to influence and attract foreign transshipment traffic. Growth in foreign traffic would automatically bring growth in coastal traffic. Moreover, Cochin Port is used as transshipment hub to transport coastal cargo between eastern and western ports.

Hence, the total projected ICTT traffic, as envisaged by the Consultant is as follows:

**Table 4.29 Total projected ICTT traffic with 16.0 m draft ('000 TEUs)**

Year	Realistic Scenario				Pessimistic Scenario			
	Gateway	Foreign Transshipment	Coastal Transshipment	Total	Gateway	Foreign Transshipment	Coastal Transshipment	Total
2025-26	669	67	36	<b>772</b>	669	67	36	<b>772</b>
2026-27	505	55	47	<b>606</b>	162	18	15	<b>195</b>
2027-28	535	58	50	<b>643</b>	173	19	16	<b>208</b>
2028-29	567	311	303	<b>1,181</b>	185	270	267	<b>723</b>
2029-30	600	315	306	<b>1,222</b>	198	272	268	<b>738</b>
2034-35	802	337	325	<b>1,464</b>	278	280	276	<b>834</b>
2039-40	1072	366	350	<b>1,789</b>	390	293	286	<b>969</b>
2042-43	1276	388	369	<b>2,034</b>	478	302	294	<b>1,074</b>

**Table 4.30 Total ICTT traffic with 14.5 m draft ('000 TEUs)**

Year	Realistic Scenario				Pessimistic Scenario			
	Gateway	Foreign Transshipment	Coastal Transshipment	Total	Gateway	Foreign Transshipment	Coastal Transshipment	Total
2025-26	669	67	36	<b>772</b>	669	67	36	<b>772</b>
2026-27	505	55	47	<b>606</b>	162	18	15	<b>195</b>
2027-28	525	57	49	<b>630</b>	168	18	15	<b>201</b>
2028-29	545	59	51	<b>655</b>	174	19	16	<b>209</b>
2029-30	567	62	53	<b>681</b>	180	20	17	<b>216</b>
2034-35	688	75	64	<b>827</b>	214	24	20	<b>257</b>
2039-40	836	91	78	<b>1,004</b>	255	28	23	<b>307</b>
2042-43	939	102	87	<b>1,129</b>	284	31	26	<b>341</b>

**Note:** Detailed year-wise traffic projections are available in

**ANNEXURE: YEAR-WISE TRAFFIC PROJECTIONS.**

## CHAPTER 5

### RATIONALE FOR 16 M DRAFT

This chapter synthesizes the findings of the traffic study to evaluate the strategic, operational, and economic implications of augmenting the navigational draft at Cochin Port's International Container Transshipment Terminal (ICTT) from 14.5 meters to 16.0 meters. By analysing traffic projections, competitive dynamics, and stakeholder inputs, the chapter underscores the urgency of infrastructure upgrades to position ICTT as a globally competitive transshipment hub. The analysis also contextualizes the project within India's broader maritime goals, including reducing dependency on foreign transshipment hubs like Colombo and enhancing the "Make in India" initiative through improved export-import logistics. Container Traffic at Cochin Port is assessed under 2 scenarios with increase in draft from 14.5 m to 16.0 m and otherwise.

- ✓ Realistic Scenario: it is assumed that Vizhinjam Port would attempt to captures as much hinterland via road & rail, considering cost advantage over ICTT. Balance hinterland would be catered via Coastal Transshipment to ICTT.
- ✓ Pessimistic Scenario: it is assumed that Vizhinjam Port would attempt to captures maximum possible hinterland, by reducing its Tariff over the published one. Balance hinterland would be catered via Coastal Transshipment to ICTT.

Based on research and discussions with various stakeholders and historical data assessment, the Consultant has determined that the primary impact of this draft increase would be on mainline vessel services.

If the draft is not increased, existing shipping lines services would eventually shift towards other regional ports with higher draft. Cochin Port will lose considerable gateway traffic volume. Loss of gateway volume will eventually affect the coastal trade of the port.

The proposed increase in draft is anticipated to retain existing shipping line services (Mainline vessels) and attract additional traffic from other services to Cochin Port.

While the consultant has studied the tangible elements for growth of the port, few intangible elements have significant effect on survival and growth of ICTT.

Below are some dynamics driving the success of few international transshipment hubs as below.

## 5.1. MAJOR TRANSSHIPMENT HUBS

### 5.1.1. JEBEL ALI PORT

In 1969, the Government of Dubai constructed a 4-berth deep-water port, The Rashid Port. It is located in the downtown area, next to the Dubai commercial centre, and was put into use formally in 1972. By virtue of the advanced port facilities and prosperous commercial activities, Rashid port operations stood successful. In 1976, Government of Dubai began to build the world's largest artificial port, which is also the first big port of the Middle East region called the Jebel Ali Port. In 1985, to match the local industrial development and attract the foreign investment, the Government of Dubai set up the Jebel Ali Free Trade Zone (JAFZA). Spread over 57 square kilometers, JAFZA is the world's largest economic free zone and contributes around 25% of Dubai's GDP.

For better development, the Government of Dubai Promulgates use of preferential policies in the free trade zone. In JAFZA, business can be run by 100% foreign ownership of enterprises, which are fully funded by foreign investors themselves. The basic characteristics of JAFZA include: Exemption from import and export tariff, permit of 100% FDI, encouragement of the private capital and international capital investment.

To encourage foreigners to invest and work, JAFZA carried out a series of special employment policies: simplifying the visa application procedures; reducing the visa fee, provide certain free work visas according to the investment and the scale of enterprises.

Operated by DP World UAE Region, Jebel Ali is now the largest marine terminal in the Middle East and the flagship facility of DP World's portfolio of over 65 marine terminals across six continents. Current container handling capacity of Jebel Ali port is approx. 19.5 Mn TEUs (Proposed-22.4 Mn TEUs).

**Cool & Cold Store:** Jebel Ali Port offers the latest cool and cold storage facilities with a floor space of 9,665 square meters, and is ideal for a wide range of perishable cargo requiring special storage conditions. These include chocolates, produce, cigarettes and alcohol, pharmaceutical products, and cosmetics.

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### **Strategic Location:**

Jebel Ali Port's location at the crossroads of trade routes connecting Asia, Africa, and Europe, provides access to a vast market of over 3 billion people.

### **Multi-Modal Connectivity:**

As an integrated multi-modal hub offering sea, air and land connectivity, complemented by extensive logistics facilities, Jebel Ali Port plays a vital role in the UAE economy. It is a premier gateway for over 90 weekly services connecting more than 140 ports worldwide.

#### **5.1.2. PORT OF TANJUNG PELEPAS (PTP)**

The Malaysian government undertook a set of notable interventions to ensure the success of Port of Tanjung Pelepas (PTP)

1. Offered several incentives to get anchor client, APM investing 30% stake in PTP and Maersk shifting most operations from Singapore to PTP
2. Leveraged gateway traffic to its advantage through duty imposition on trucks going out of Malaysia to redirect traffic for the PTP
3. Focused on high port productivity and efficiency right from the design stage
4. Ensured feeder network availability by opening the carriage of transshipment containers for foreign ship owners from Port Klang and Tanjung Pelepas to ports in Kuching, Bintulu and KK

Above interventions exhibit that PTP did a courageous action, despite knowing that Singapore's overriding superiority in port infrastructure, efficiency and, most importantly, vast shipping lines network gave the island-state the upper hand.

Over the years, Tanjung Pelepas Port has experienced remarkable growth. From handling 1.2 million TEUs (twenty-foot equivalent units) in its first year of operation(1999), the port's capacity has expanded to more than 12 million TEUs annually today. PTP ranks among the top 20 container ports globally now, and it is consistently ranked as one of the busiest ports in Southeast Asia. A key driver of this success has been its ability to attract major global shipping alliances. Tanjung Pelepas Port is home to a wide array of shipping lines, including Maersk, MSC, and CMA CGM, which use the port as a key transshipment hub. The presence of these

world-class shipping lines has significantly contributed to the port's growth and solidified its role as a major player in the global shipping industry.

### 5.1.3. Singapore Port

The number one reason proffered for Singapore's success is her location. However, it doesn't stand up to scrutiny.

The 900 km-long Straits of Malacca is one of the busiest sea-lanes in the world. Malaysia or Indonesia could have built any number of competitor ports to rival Singapore along its length. There is nothing particularly unique about our location like a Suez or a Panama that sets us out as a "no other option" choke point, especially for transshipment. Yet Singapore handles 1/7th of total global container transshipment.

Singapore does not have a monopoly on shipping technology. Port facilities are available off-the-shelf to any other port operator. Singapore is expensive compared to the region, due to strong currency and first-world wages. It has never been able to compete on cost, even in the early 1970s when container shipping was in its infancy.

Yet, competitor ports have not been able to catch up for five decades because of turnaround time, comprehensive suite of services and connectivity. For example, Singapore has one of the five largest ship registries, top shipping lawyers, sophisticated financing. It has a head start as a shipping hub but a determined competitor can always upgrade their expertise and infrastructure. What is very difficult to replicate is the reputation for a square deal, respect for the rule of law, efficiency and safety and security. In short, a great customer experience that's several steps ahead of the region. Singapore is a brand people trust.



**Figure 5-1 Singapore Port Masterplan**

By 2040, the Tuas Mega port will come online to full capacity at 65 million TEU per year, close to double the year 2023 throughput (39 Mn TEUs). It will offer unrivalled volume and connectivity for major and regional shipping lines.

**Other reasons for success of Jebel Ali Port, Singapore Port and Tanjung Pelepas Port are as below:**

- A. **Stable currency:** There are no sudden appreciations or depreciations while ships are coming and going;
- B. **Stable government:** self-explanatory
- C. **Good Governance:** Robust legal rules & regulations with little or no arbitrary decisions. As a shipper, you do not want your goods impounded depending on interpretation;
- D. **Low or No Corruption:** This goes to cost of doing business. If corruption is high, then cost of business increases though port fees are low.

## 5.2. CAPACITY CONSTRAINTS

Colombo Port which handled approximately 7.0 Mn TEUs in 2023 is planning to expand the capacity to approximately 14 Mn TEUs. Vizhinjam Port with current handling capacity of approximately 1 - 1.5 Mn TEUs is planning to expand the capacity expansion to approximately 4 Mn TEUs.

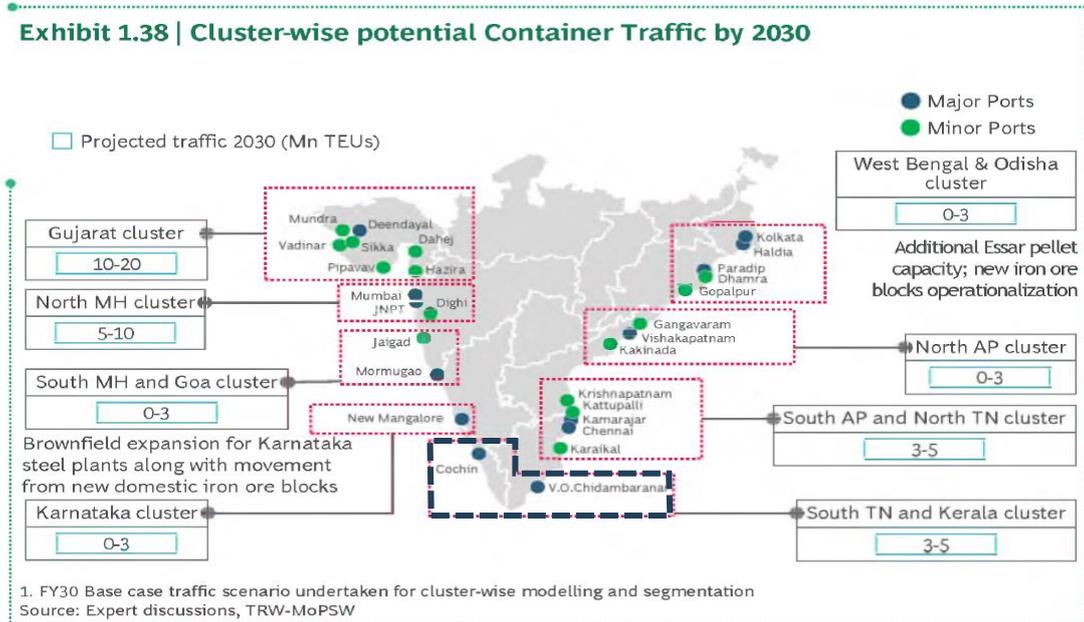
ICTT (DP World Cochin) with existing container handling capacity of approximately 1.2 Mn is operating at ~70% occupancy; ideal situation for commencement of capacity expansion; hence capacity expansion now becomes a necessity rather than choice.

- ✓ As the only Major Port Transshipment Hub, ICTT will complement Vizhinjam, offering alternate options to global carriers and helping regulate tariffs at Vizhinjam.
- ✓ Cochin Port must act now to secure a larger share of transshipment traffic ahead of Colombo and Vizhinjam

## 5.3. INDIA MARITIME VISION 2030

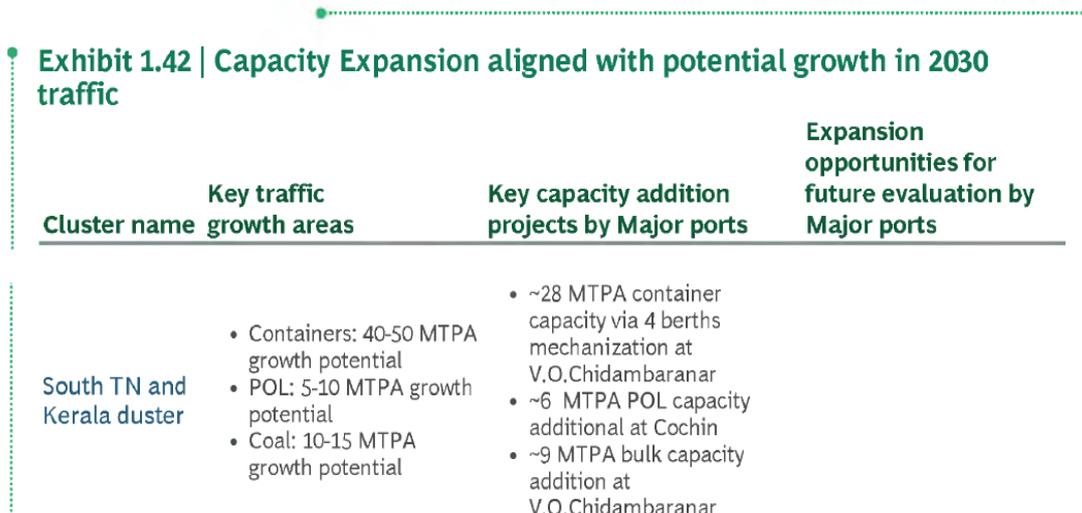
As per Exhibit 1.38 (Cluster-wise potential Container Traffic by 2030) of India Maritime Vision 2030, South Tamil Nadu and Kerala Cluster which included Cochin

Port and V.O.C Port container terminals are expected to handle 3 – 5 Mn TEUs of container traffic in base case scenario.



**Figure 5-2 Cluster-wise Potential Container Traffic**

To ensure that capacity expansion occurs in line with traffic growth potential across regional clusters (Exhibit 1.42), potential areas for capacity expansion are identified and prioritized across three phases (Immediate priority, Short-term priority, and Medium to Long-term priority).



**Figure 5-3 Capacity Expansion Aligned with Growth**

Major ports have identified capacity expansion projects based on the following themes (Exhibit 1.43):

- ✓ New berth addition in line with cargo profile
- ✓ Existing berths upgrade to improve handling capacity
- ✓ Existing berths conversion to handle new commodities

**Exhibit 1.43 | Capacity Expansion projects identified at Major Ports as part of MIV 2030**

	<b>New berths addition in line with expected cargo profile</b>	<b>Existing berths upgrade to improve handling capacity</b>	<b>Existing berths conversion to handle new commodities</b>
<b>Phase - I</b>	<ul style="list-style-type: none"> <li>• Extension of ICTT terminal with ~4.5 MTPA container capacity at Cochin port</li> <li>• Extension of BMCT container terminal with ~30 MTPA capacity on DBFOT basis at JNPT port</li> <li>• ~18 MTPA coal handling capacity addition through CB-3 &amp; berths at Kamarajar port</li> <li>• New ~10 MTPA bulk berth development for coal imports at Paradip port</li> </ul>	<ul style="list-style-type: none"> <li>• Modification of Iron ore terminal to ~12 MTPA coal terminal (SIOTL) at Kamarajar port</li> <li>• ~11 MTPA coal handling capacity addition through Multi-cargo and Bulk terminal at Kamarajar port</li> <li>• Setting up Floating Cranes / RMQCs/extended gate facilities for ~8.5 MTPA container capacity addition at Kolkata Dock complex</li> <li>• Mechanization of Berth No. 3 (~3.5 MTPA bulk capacity) on DFBOT basis at Haldia Dock</li> </ul>	<ul style="list-style-type: none"> <li>• Rejuvenation of KPD berths for ~5.5 MTPA container capacity through PPP mode at Kolkata Dock Complex</li> <li>• Conversion of Berth 9 to handle container traffic (12 MTPA capacity) under PPP mode at V.O. Chidambaranar port</li> </ul>

**Figure 5-4 Capacity Expansion Projects at Major Ports**

As part of MIV 2030, Major Ports need to undertake 423 MTPA capacity addition. A total investment cost of over INR 33,400 Cr. has been envisaged for this capacity expansion. Out of this, approximately 95% capacity expansion is likely to be planned under Public Private Partnership (PPP)/ Captive mode by Major Ports (Exhibit 1.44).

**Exhibit 1.44 | 95% Capacity Expansion at Major Ports planned under PPP/ Captive Mode**

S No.	Major Port name	Capacity Addition	Investment (Rs. Crore)	PPP / Captive	Internal resources
1	Kolkata Port (KDS & HDC)	27	1408	1285	123
3	Paradip Port	89	10213	10213	0
3	Visakhapatnam Port	15	812	633	179
3	Kamarajar Port	81	3976	3786	190
3	Chennai Port	0	0	0	0
3	V.O.Chidambaranar Port	37	1207	1207	0
3	Cochin Port	10	1405	1384	21
3	New Mangalore Port	13	431	281	150
3	Mormugao Port	16	903	700	203
10	Mumbai Port	11	2062	1946	116
11	Jawaharlal Nehru Port	37	3724	3724	0
12	Deendayal Port	87	7289	6975	314
<b>Total</b>		<b>423</b>	<b>33429</b>	<b>32134</b>	<b>1295</b>

Source: Major port teams, TRW-MoPSW

**Figure 5-5 Capacity Expansion Projects under PPP**

**Transshipment Hub:**

Based on learnings from successful global transshipment hubs, few factors have been identified for a transshipment hub which influence routing decisions of mainliners. These factors include:

1. Availability of deep draft
2. Proximity to maritime routes
3. Hinterland connectivity & gateway Cargo
4. Positive economics of cargo logistics
5. Productivity and reliability of ports operations
6. Ease of customs processes and taxation support
7. Ancillary services (Bunkering, Crew Change, etc)

As part of vision 2030, keeping in view above mentioned factors, phase-wise development approach to be undertaken to ensure the success is highlighted as follows -

- Prioritize development of Vizhinjam in the short-term (1-3 years) by providing required support from Central Govt.

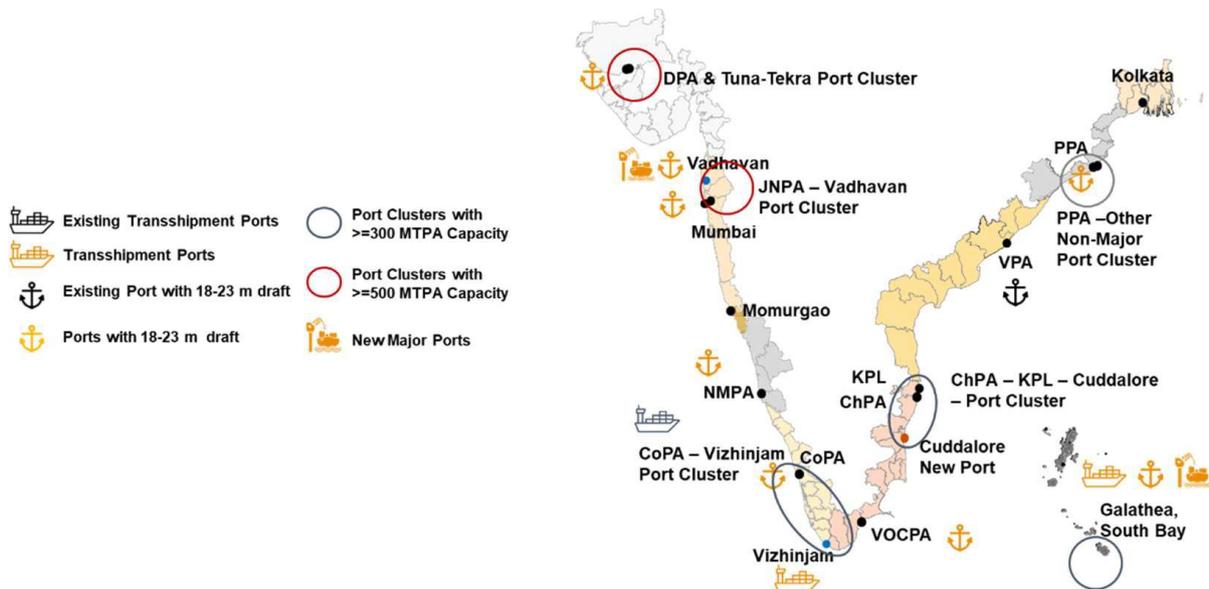
- Setup additional transshipment hub in the Kanyakumari region (5-8 years) under the guidance of V.O. Chidambaranar port
- Set up additional transshipment hub in the Campbell Bay (5-8 years) in a phased manner
- Enhance Transshipment volumes at Cochin Port (1-2 years)

#### 5.4. MARITIME AMRIT KAAL VISION 2047

Maritime Amrit Kaal Vision aims to develop best-in-class port infrastructure in India by year 2047. Following three key areas are considered for achieving this objective:

1. Creating Mega Ports
2. Setting Up Transshipment Hubs
3. Improving Port Performance

Considering the capacity constraints at major ports due to geographical and regulatory restrictions, capacity expansion can take place at port cluster level. Port clusters consist of geographically concentrated network of ports around a maritime range. **Figure 5-6** below provides the locations of port clusters along with their target capacity by 2047.



**Figure 5-6 Location of Port Clusters**

Government has identified **CoPA - Vizhinjam Port Cluster** under existing transshipment ports.

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## **5.5. DP WORLD: A STRATEGIC INVESTOR IN INDIAN MARITIME INFRASTRUCTURE**

DP World, a global provider of end-to-end supply chain solutions, has invested over \$3 billion in the last decade across various assets in India as following:

### **5.5.1. HINDUSTAN INFRALOG PRIVATE LIMITED:**

Hindustan Infralog Private Limited (HIPL) is a joint venture between DP World and the National Investment & Infrastructure Fund (NIIF). The company focuses on investing in ports, logistics, and related sectors across India. HIPL has a goal to invest up to \$3 billion in these sectors. For example, they invested INR 1,000 crore in developing a Free Trade Zone (FTZ) at Nhava Sheva Business Park. HIPL also acquired a 90% stake in Continental Warehousing Corporation (Nhava Seva) Ltd, a multimodal logistics provider.

### **5.5.2. CHENNAI COLD CHAIN**

The warehouse zone in Chennai, which is set up in 125 acres of land is the largest of the three Free Trade Warehousing Zones (FTWZ) the company has set up in India. The first phase project on 6 lakh sq. ft in Chennai was inaugurated in October, 2023. The second phase is likely to be completed by 2027.

### **5.5.3. CONTINENTAL WAREHOUSING CORPORATION**

Hindustan Infralog Private Limited (HIPL), has 90% stake in Continental Warehousing Corporation (Nhava Seva) Ltd. CWCNSL's founders, the Reddy family, have the remaining 10% shareholding.

CWCNSL was founded in 1997 and is a leading integrated multimodal logistics provider of Warehousing, Container Freight Stations (CFS), Inland Container Depots (ICD), Private Freight Terminals (PFT) and integrated logistics solutions. CWCNSL's logistics network is spread across key strategic locations in India covering a total area of over 400 acres and providing over 660k TEU (twenty-foot equivalent units) capacity. In addition, CWCNSL's wholly owned subsidiary Delex Cargo India Private Ltd provides door-to-door logistics solutions including freight forwarding, 3rd party logistics, express logistics and hub-and-spoke model of delivery across 54 locations in 40 cities.

### **5.5.4. KRISHAK BHARATI COOPERATIVE LTD**

DP World and NIIF through HIPL have acquired 76% stake in multi-modal logistics platform KRIBHCO Infrastructure Limited from Krishak Bharati Cooperative Ltd. KRIBHCO has retained remaining 24% in KRIBHCO Infrastructure Limited, which operates three private freight terminals in Haryana's Pali, Uttar Pradesh's Modinagar and Gujrat's Hazira.

#### **5.5.5. FREE TRADE WAREHOUSING ZONES**

DP World has developed 4 Free Trade Warehousing Zones (FTWZs) in India: Nhava Sheva Business Park (NSBP, Mumbai in Maharashtra), Integrated Chennai Business Park (ICBP, Chennai in Tamil Nadu) and Cochin Integrated Business Park (DP World Cochin Economic Zone in Kerala). These strategically located zones connect the western, southeastern, and southwestern regions of India to international markets through our robust multimodal logistics network, enhancing operational efficiency and streamlining global supply chains.

FTWZs encourage investments in advanced infrastructure like world-class warehouses, cold storage facilities, hazardous and over dimensional cargo handling facilities, and technology-enabled logistics hubs. These facilities help modernise the trade ecosystem and enhance India's export capabilities.

#### **5.5.6. UNIFEEDER SERVICE (SHORT-SEA FEEDERS)**

Unifeeder is an international logistics company, providing the best-connected feeder and multimodal transportation services across Europe, the Middle East, Asia, the Wider Indian Subcontinent and Americas. Unifeeder plays a critical role as a facilitator of agile supply chains for both global and regional trade. Unifeeder provides connectivity for major international deep-sea container shipping lines, enabling access to ports and regions beyond their reach.

- **Feeder Services**

Unifeeder provides feeder services, which transport containers from large European hubs to regional ports in India.

- **Shortsea Services**

They also offer shortsea services, which are fully multimodal door-to-door transport options, often utilizing seaborne transportation with road and rail logistics.

DP World's capital investments are backed by sovereign funds and align with India's long-term maritime goals.

- ✓ Supported by NIIF (22% stake in Hindustan Ports Pvt Ltd), DP World demonstrates a testament to national-level commitment.
- ✓ With plans to start ship-leasing operations in the GIFT City of Gujrat, beginning with four ships; DP World has future potential to launch a dedicated shipping line.
- ✓ DP World is now a logistics powerhouse in India with control across the value chain — ports, rail, shipping, and inland logistics.

Investment in dredging by Cochin Port will be significantly less than the expansion investment by DP World in ICTT. Protection and support of such investments is in the national economic and strategic interest.

Benefits include:

- ✓ Infrastructure enhancement.
- ✓ Foreign direct investment inflow.
- ✓ Employment generation.
- ✓ Growth in lighthouse dues, customs revenues, and taxes.

## **5.6. HISTORY OF ICTT: INDIA'S FIRST TRANSHIPMENT HUB**

The first experiment with a transshipment hub of India, International Container Transshipment Terminal Kochi, is struggling since starting operations in February 2011. The terminal was built with an investment of ₹ 2,800 crore, of which the Indian government contributed ₹ 1,700 crore, while the DP World spent ₹ 1,100 crore.

ICTT was commissioned with an objective to move back transshipment of Indian and Indian sub-continent cargo containers to an Indian port.

The port calling costs at Colombo were one-tenth of the costs at ICTT. This made competing with Colombo an extremely difficult task. To add to the woes, a depth of 14.5 metres at Vallarpadam was insufficient to attract big mainline ships with a capacity to carry over 10,000 TEUs.

The ICTT operates from a special economic zone (SEZ) that grants fiscal concessions and procedural ease at par with competing global terminals. But a jurisdictional

issue between the Customs and the SEZ authorities over clearance of transshipment containers cost precious time for the terminal during its initial days.

Colombo consolidated its position while ICTT was struggling for approvals and procedures to fall in place.

### **5.7. SUPPORT TO VIZHINJAM PORT FROM GOVERNMENT IN GRANT AND ROYALTY**

Built under a public-private partnership (PPP), the port is developed and operated by the Adani Group, while the Kerala government holds the 61.5 per cent majority stake and the Centre holds 9.6 per cent. The cost of the first phase amounted to ₹8,867.14 crore. While the Kerala State Government spent ₹5,595.34 crore, the Adani Group shelled out ₹2,454 crore. The Central Government contributed ₹817.8 crore as Viability Gap Funding (VGF) and ₹795 crore as Capital Investment Loan, an interest-free loan to be repaid over 50 years.

Until 2034, the state's earnings will be limited to its GST share from cargo movement. Afterwards, the state will begin receiving 1% share of cargo revenue, which will gradually increase to 40% by 2060, when the Adani Group's operational tenure ends.

### **5.8. ICTT AS TRANSSHIPMENT HUB: ENABLERS**

Upon interaction with various stakeholders, it is understood that following enablers will help ICTT transform into a transshipment hub.

**VRC:** The Consultant is of the opinion that ICTT should ensure that the VRC is competitive with respect to Colombo & Vizhinjam Ports for all types of ships.

**Marine Aids to Navigation Due (Lighthouse Due):** The prevailing Marine Aids to Navigation (formerly Lighthouse Dues) applicable to foreign-going container vessels in India are currently levied at INR 85 per TEU, in addition to 18% GST. This level of charges is more than double the corresponding tariff imposed by Sri Lanka, thereby creating a significant cost disadvantage for Indian ports in the regional transshipment market. To enhance competitiveness and attract higher transshipment volumes, it is recommended that the Government of India consider rationalizing these dues and aligning them with regional benchmarks, particularly with Sri Lanka.

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## 5.9. ICTT AS TRANSSHIPMENT HUB: BENEFITS

**Foreign Exchange Savings:** In the absence of a deep-water transshipment hub within the country, approximately 75% of India’s transshipment cargo, destined to/originated from Indian hinterland, is currently routed through foreign ports such as Colombo (Sri Lanka), Singapore, and Jebel Ali (UAE). This dependency not only extends transit times but also imposes additional costs on domestic traders, estimated at USD 80–100 per container, translating to an annual outflow of nearly USD 200–220 million. Developing India’s capability to handle its own transshipment volumes presents a significant opportunity to retain this revenue. The International Container Transshipment Terminal (ICTT) is strategically positioned to emerge as one of the key hubs enabling India to capture this traffic and strengthen its role in the regional maritime ecosystem.

**Direct Service:** The establishment of direct mainline shipping services at ICTT would significantly enhance the terminal’s network reliability, while simultaneously reducing India’s dependence on foreign transshipment hubs. This, in turn, would mitigate potential disruptions arising from geopolitical developments in other regional ports, thereby providing greater stability and predictability for Indian trade.

### **Socio-economic benefit:**

#### **❖ Employment Generation and Regional Development**

The growth of ICTT as a transshipment hub will act as a catalyst for direct and indirect employment creation in Kerala and beyond. Increased port activity requires expanded manpower across terminal operations, shipping agencies, customs, and pilotage services. Beyond the port gates, the ripple effects would extend to container freight stations (CFS), inland container depots (ICD), trucking, rail logistics, warehousing, and last-mile distribution. The multiplier effect of such employment will stimulate demand in ancillary sectors such as real estate, hospitality, and retail, driving overall regional economic development. For Kerala in particular, ICTT’s growth offers a pathway to reposition itself as a strategic logistics and trade hub, attracting fresh investments and encouraging industrial diversification in a state traditionally dependent on remittances and services.

#### **❖ Infrastructure Development and Multimodal Connectivity**

An expanded role for ICTT as a transshipment hub will necessitate parallel investments in supporting infrastructure, including road, rail, and inland waterway connectivity. This will accelerate multimodal integration in the region, aligning with national initiatives such as the PM Gati Shakti program and Sagarmala. Enhanced hinterland connectivity will not only support ICTT but also improve logistics competitiveness for industries located in Kerala, Tamil Nadu, and Karnataka, making these states more attractive for domestic and foreign investment. Such infrastructure development has long-term socio-economic spillovers, boosting productivity across multiple sectors of the economy.

#### ❖ **Contribution to National Maritime Ambitions**

ICTT's growth supports broader policy frameworks such as the Maritime India Vision 2030, Sagarmala Programme, and India's ambition to become a leading transshipment destination in South Asia. By positioning Cochin as a regional hub, India would not only retain domestic cargo but could also attract transshipment traffic from neighbouring countries, gradually reducing Colombo's dominance. This would generate incremental revenue for Indian ports, enhance global visibility, and contribute to the country's aspiration of establishing itself as a global logistics and shipping powerhouse.

#### ❖ **Environmental and Sustainability Benefits**

By reducing the need for feeder services to foreign ports, ICTT's development as a hub can also contribute to lowering carbon emissions associated with longer shipping routes. This aligns with India's sustainability goals and the global shipping industry's decarbonization agenda. Enhanced efficiency in cargo handling and reduced transit times will make Indian trade not just more competitive but also more environmentally sustainable.

### **5.10. WAY FORWARD**

Keeping in view the capacity constraints, presence and capabilities of DP World in India and abroad, increase in draft from 14.5 M to 16 M will help Cochin Port and ICTT to handle mainline vessels and compete with Colombo and Vizhinjam. Any delay in dredging will shorten the cost recovery window for the terminal operator, which has already completed 13 years of operation under concession. Once the adequate

draft is in place (16 M), ICTT will be ready to act as Future-Ready Transshipment Hub.

Cochin-Vizhinjam cluster will offer potential to become a dual-hub strategy for India. It will reduce dependency on foreign transshipment ports and invite other mainline operators (other than MSC). DP World can leverage its Unifeeder network and last-mile rail connectivity to enhance cargo reach.

Global terminal operators such as DP World (leading provider of end-to-end logistics solution) are vital for ICTT to flourish. The government must handhold and facilitate DP World and CoPA, as in case of Vizhinjam Port, to accelerate investment and capacity expansion. Full readiness in terms of cost competitiveness and draft availability is key to transforming ICTT into a global container transshipment hub. Any delay in capacity readiness risks long-term erosion of ICTT's relevance in the regional transshipment landscape.

The proposed draft augmentation is a linchpin for ICTT's survival in an era dominated by mega-vessels and hyper-competitive transshipment markets. Delaying the project risks irreversible cargo diversion, investor attrition and strategic reliance on Colombo for a major chunk of India's transshipment needs.

A three-pronged strategy is non-negotiable:

1. Central Grant Support to Cochin Port
2. Policy-Driven Collaboration between Cochin and Vizhinjam to replicate the Shenzhen-Hong Kong success story.
3. Operator-Centric Reforms to ensure ICTT's efficiency regardless of DP World's continuity.

The window for action is narrow: Vizhinjam Phase 1 completion (2025) and Colombo's East Container Terminal expansion (2025) will redefine regional dynamics. Cochin Port must act decisively to secure its place in India's maritime future.

## CHAPTER 6

# FINANCIAL ANALYSIS AND PROJECT FEASIBILITY

### 6.1 INTRODUCTION

The Financial Analysis and Project Feasibility is an important message to decision maker to decide how a project can be implemented. In this section, the Consultant has attempted to assess the value that can be derived, by Cochin Port, by increasing the draft from 14.5 m to 16.0 m. The study included the key standard parameter i.e. Net Present Value and Internal Rate of Return (IRR) based on discounted cash flow statement up to 2043.

### 6.2 APPROACH TO ANALYSIS

- The financial model takes inputs from the market studies done for the project, and other data sources for financial assumptions.
- The block capital costs, required for increase in draft, for all the project elements has been taken as per input shared by Cochin Port Authorities.
- The additional operation and maintenance cost, required to be incurred towards increased draft has also been taken as per input shared by Cochin Port Authorities.
- The implementation period considered for undertaking capital expenditure is 18 months, as suggested by Cochin Port Authorities. It is assumed to commence on 01 Apr 2026 and end by 30 Sep 2027.
- Additional Containers handled at Cochin Port, due to increase in draft, is considered as Traffic to undertake financial analysis and evaluate project feasibility.
- With reference to the discussions with Cochin Port Authorities, it is decided not to consider incremental revenue from Vessel Related Charge (VRC) due to following factors:
  - The Port is extending concession to Feeder and Mainline Vessels in the range of 10% to 90%.
  - As per Tariff Guidelines, VRC for Coastal Vessels should not exceed 60% of Foreign Vessel Charges, and the exchange rate fluctuation shall not be factored while fixing the coastal rates. Hence, the present coastal rates are in effect only 37% of the Foreign Vessel Charges. However, the expenditure incurred for handling foreign/coastal vessel remains same. On analysis of

VRC it is found that the VRC from Coastal Vessels is less than the direct cost incurred.

- The VRC from Mainline Vessels is less than the direct cost incurred due to extension of concession up to 90%.
- The surplus generated from Foreign Feeder Vessel offsets the loss from Coastal and Mainline Vessels, resulting in Break Even.
- For computation of revenue from Terminal Handling Charges, SOR as per TAMP Order TAMP/12/2009-Misc dated 27 Mar 2025 has been adopted.
- Model is prepared assuming operation and maintenance cost would inflate by 5%, as suggested by Cochin Port. It is assumed that WPI would grow at 5% year-on-year, hence, revenue growth of 3% is considered in line with TAMP Guidelines (60% of WPI).
- Two funding scenarios are explored with one being funded through 100% Capital Grant from Government of India and other being self-funded with debt assistance from external financial institution. Operation and Maintenance Cost, in both the scenarios, is assumed to be funded from internal funds of Cochin Port.
- The Financial Analysis is done up to 2042-43 for which Traffic is also estimated.

### 6.3 CAPITAL COST

Cost towards Capital Dredging up to (-)18m at the Outer Channel and ICTT berth basin has been assessed by Cochin Port and shared with the Consultant.

**Table 6.1 Capital Dredging Cost (INR Crore)**

Particular	Grant	Self-Funded
Dredging Cost	475.00	475.00
GST on Dredging Cost	85.50	85.50
IDC	-	15.85
<b>Total Capital Cost</b>	<b>560.50</b>	<b>576.35</b>

### 6.4 MEANS OF FINANCE

The cost of the project varies due to option of implementation adopted. The means of financing the capital cost may be

- Grant from Government of India

- Raise 70% soft debt from Financial Institutions for a period of 15 years with cost of debt being 5% per annum. Balance cost of 30% would be funded from Internal Resources

**Table 6.2 Source of Funds (INR Crore)**

Means of Finance	Grant	Self-Funded
GoI Grant	560.50	
Debt		403.45
Internal Funds		172.91
<b>Total Source of Funds</b>	<b>560.50</b>	<b>576.35</b>

## 6.5 TRAFFIC CONSIDERATION

The Consultant has studied and assessed past container traffic data of ICTT in conjunction with existing hinterland being catered and threat from existing and upcoming nearby Ports. Under the backdrop of increasing the draft or maintaining the same, the traffic is analysed under two scenarios namely Realistic and Pessimistic. However, for the purpose of financial analysis, only Realistic Scenario is considered.

**Table 6.3 Traffic (Realistic Scenario)**

Year	16.0 m Draft ('000)				14.5 m Draft ('000)			
	Gateway	Transshipment		Total	Gateway	Transshipment		Total
		Foreign	Coastal			Foreign	Coastal	
2025-26	669	67	36	<b>772</b>	669	67	36	<b>772</b>
2029-30	600	315	306	<b>1,222</b>	198	272	268	<b>738</b>
2034-35	802	337	325	<b>1,464</b>	278	280	276	<b>834</b>
2039-40	1072	366	350	<b>1,789</b>	390	293	286	<b>969</b>
2042-43	1276	388	369	<b>2,034</b>	478	302	294	<b>1,074</b>

## 6.6 TERMINAL HANDLING CHARGES

Terminal Handling Charges is considered, as published, based on TAMP Order TAMP/12/2009-Misc dated 27 Mar 2025. However, based on interaction with

various stakeholders, it is understood that prevailing market rate for Foreign Laden Transshipment 20ft and 40ft container are USD 80 and USD 110 against TAMP Order of USD 139.30 and 208.97 respectively. Hence, the prevailing rate is considered over TAMP Order. Tariff for Foreign Empty Transshipment for 20ft and 40ft container is reduced in line with Foreign Laden and Empty Transshipment in TAMP Order. Discount is also offered on Coastal Transshipment to maintain parity with Foreign Transshipment and the same is considered as prevailing market rate.

Table below highlights the THC Charges as per prevailing market rates.

**Table 6.4 Terminal Handling Charges**

Particulars	Laden		Empty		Weighted Average Tariff per TEU	
	THC	5 Year Average TEU Ratio	THC	5 Year Average TEU Ratio	Laden	Empty
<b>Gateway</b>						
Foreign Cargo						
20 ft Container	8,937.26	1.55	6,638.02	1.72	7,349.55	5,253.05
40ft Container	13,406.75		9,957.96			
Coastal Cargo						
20 ft Container	5,055.91	1.14	3,253.86	1.10	4,744.49	3,104.12
40ft Container	7,583.93		4,880.83			
<b>Transshipment</b>						
Foreign Cargo						
20 ft Container	6,800.00	1.31	6,039.08	1.77	5,800.94	4,397.25
40ft Container	9,350.00		8,303.74			
Coastal Cargo						
20 ft Container	4,000.00	1.21	3,178.50	1.18	3,559.11	2,939.29
40ft Container	5,500.00		4,767.80			

## 6.7 OPERATION AND MAINTENANCE COST

Additional Maintenance dredging cost required to be incurred by Cochin Port every year. The additional maintenance dredging cost for the first year has been assessed by Cochin Port and shared with the Consultant.

**Table 6.5 Operation and Maintenance Cost**

Particulars	Value
First Year additional Maintenance Dredging Cost	41.30
Annual Escalation in Operation and Maintenance Cost	5.0%

## 6.8 OTHER ASSUMPTIONS

Besides above, the Consultant has considered various other assumptions for undertaking Financial Analysis and evaluate Project Feasibility. The other assumptions are given below

**Table 6.6 Other Assumptions**

Particulars	Value
Average GRT per Vessel (Total Annual GRT/Total Annual Vessels)	31,694
Average TEUs per Vessel (Total Annual TEUs/Total Annual Vessels)	1,155
Average Berth Time in Hours (Administrative Report)	18.76
5 Year Average Share of Laden Containers (Administrative Report)	
Foreign	
Gateway	76.1%
Transshipment	59.1%
Coastal	
Gateway	59.1%
Transshipment	75.2%
Inflation	
Revenue Inflation (based on TAMP)	3.0%
Capex Inflation (based on discussion with CoPA)	0.0%
Opex Inflation (as provided by CoPA)	5.0%
Foreign Exchange Conversion Rate (USD to INR)	85.00
Royalty from ICTT to Cochin Port (% of Terminal Handling Charges)	33.30%

## 6.9 FINANCIAL ANALYSIS AND PROJECT FEASIBILITY

Based on the assumptions considered in the above sections, the Consultant has prepared Cash Flow Statement up to financial year ending 2043, in line with traffic projection. The Cash Flow Statement is prepared under both the scenarios, one being

100% Capital Grant from Government of India under Sagarmala scheme and other being self-funded with debt assistance from external financial institution. Detailed Revenue Schedule, under both the scenarios, with 16m and 14.5m draft is presented in **ANNEXURE – REVENUE SCHEDULE**. Similarly Detailed Cash Flow Statement, under both the scenarios, is presented in **ANNEXURE – FINANCIAL ANALYSIS**.

Net Present Value and Internal Rate of Return is computed from Cash Flow Statement drawn and the output of the same is presented in Table 6.7 below:

**Table 6.7 Summary of Key Output Parameter**

Particulars	Grant	Self-Funded
Net Present Value @ 8%	109.90	(382.93)
Internal Rate of Return (%)	26.4%	Negative

## 6.10 SCENARIO ANALYSIS

### 6.10.1 OPEX SHORTFALL COMPENSATION

The Consultant has observed that though Internal Rate of Return with Grant from Government of India is financially feasible, traffic during the initial years is insufficient to meet operation and maintenance cost, required by CoPA to incur. Hence, the Consultant has computed the shortfall that needs to be met through a suitable, mutually agreed cost sharing arrangement between CoPA and IGTPL.

**Table 6.8 Opex Shortfall**

Year	INR Crore
2027-28	22.29
2028-29	3.94
2029-30	2.29
2030-31	0.29

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## 6.11 CONCLUSION

The objective of the chapter is to assess the value that can be derived by Cochin Port due to increase in the draft of the vessels from 14.5 m to 16.0 m. Based on secondary research and discussions with various stakeholders; Capital Cost and Operation & Maintenance Cost estimated by CoPA; assessment of sources of fund either as Grant or Self-Funded, the Consultant is of the opinion that the proposal to increase the draft from 14.5 m to 16.0 m is financially feasible only if Capital Cost is funded through grant from Government of India. Moreover, the shortfall in revenue to meet the operation and maintenance cost due to insufficient traffic in the initial years is to be met through a suitable, mutually agreed cost sharing arrangement between CoPA and IGTPL.

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## **ANNEXURE - INTEGRATED LOGISTICS COST ANALYSIS**

## APPROACH OF ANALYSIS

- The distance (by road) from Cochin Port and Vizhinjam Port till destination districts have been estimated using google map. Based on the quotation received from the trucking services, road freight per TEU has been computed up to end destination from respective port.
- The Terminal Handling Charges (THC) and Vessel Related Charges (VRC) have been taken as per Scale of Rates available at respective websites of Port Authorities and Terminal Operators.
- For the purpose of standardization of cost, all the tariffs have been calculated in Indian Rupees with conversion rate of USD 1 equal to INR 83.

## ASSUMPTIONS

Following assumption have been considered while computing the total logistics cost for an importer or exporter.

Sr No	Particulars	Quantity
1	Total Number of Container Ships	610
2	Total GRT of Ships	16,933,937
3	Average GRT of Ships (2/1)	27,761
4	Total TEUs	695,230
5	Average TEUs per Vessel (4/1)	1,140
6	Average GRT per TEU (3/5)	24.36
7	Average Turnaround Time (hrs)	24.00

Source: Administrative Report

## TOTAL LOGISTICS COST IF CONTAINER IS TRANSSHIPPED BY VIZHINJAM TO COCHIN

The Consultant has assessed total logistics cost per TEU by considering an example of a 20' loaded container arriving in a 25,000 GRT vessel at ICTT. Container is unloaded in ICTT and delivered in Alappuzha District via road route.

### 1. Mother Vessel at Vizhinjam

#### A. THC at Vizhinjam

Cost per Container	Dollar to Rupee Conversion	THC
\$ 110	83 Rupees per Dollar	₹ 9,130.00

## B. VRC at Vizhinjam

Cost per 20' TEU	Unit/Quantity	Value
Port Dues	Per GRT of Vessel	\$ 0.0551
<b>Total Port Due</b> (Port Dues x GRT per TEU x Dollar to Rupee Rate)	(0.0551 x 24.36 x 83)	<b>₹ 111.39</b>
Pilotage	Per GRT of Vessel	\$ 0.1271
<b>Total Pilotage</b> (Pilotage x GRT per TEU x Dollar to Rupee Rate)	(0.1271 x 24.36 x 83)	<b>₹ 256.95</b>
Berth Hire Charges	Per GRT of Vessel per Hour	\$ 0.0025
<b>Total Berth Hire Charges</b> (Berth Hire Charges x Average Turnaround time x GRT per TEU x Dollar to Rupee Rate)	(0.0025 x 24 x 24.36 x 83)	<b>₹ 121.30</b>
<b>Total VRC</b>		<b>₹ 489.65</b>

## 2. Feeder Vessel

### A. VRC at Vizhinjam

Cost per 20' TEU	Unit/Quantity	Value
Port Dues	Per GRT of Vessel	\$ 0.0551
<b>Total Port Due</b> (Port Dues x GRT per TEU x Dollar to Rupee Rate)	(0.0551 x 24.36 x 83)	<b>₹ 111.39</b>
Pilotage	Per GRT of Vessel	\$ 0.1271
<b>Total Pilotage</b>	(0.1271 x 24.36 x 83)	<b>₹ 256.95</b>

(Pilotage x GRT per TEU x Dollar to Rupee Rate)		
Berth Hire Charges	Per GRT of Vessel per Hour	\$ 0.0025
<b>Total Berth Hire Charges</b> (Berth Hire Charges x Average Turnaround time x GRT per TEU x Dollar to Rupee Rate)	(0.0025 x 24 x 24.36 x 83)	<b>₹ 121.30</b>
<b>Total VRC</b>		<b>₹ 489.65</b>

B. Freight from Vizhinjam to Cochin via Feeder

Cost per Container	Dollar to Rupee Conversion	Value
\$ 125	83 Rupees per Dollar	₹ 10,346.61

C. THC at Cochin Port

Cost per Container	Dollar to Rupee Conversion	THC
\$ 105.41	83 Rupees per Dollar	₹ 8,748.69

D. VRC at Cochin Port

Cost per 20' TEU	Unit/Quantity	Value
Port Dues	Per GRT of Vessel	\$ 0.51770
<b>Total Port Due</b> (Port Dues x GRT per TEU x Dollar to Rupee Rate)	(0.51770 x 24.36 x 83)	<b>₹ 1,046.61</b>
Pilotage	Per GRT of Vessel	\$ 1.12608
<b>Total Pilotage</b> (Pilotage x GRT per TEU x Dollar to Rupee Rate)	(1.12608 x 24.36 x 83)	<b>₹ 2,276.55</b>
Berth Hire Charges		\$ 0.007807

<b>Total Berth Hire Charges</b> (Berth Hire Charges x Average Turnaround time x GRT per TEU x Dollar to Rupee Rate)	(0.007807 x 24 x 24.26 x 83)	<b>₹ 378.79</b>
<b>Total VRC</b>		<b>₹ 3,701.95</b>

### 3. Road Freight

Cost per Km	Distance from Cochin to Alappuzha	Value
₹ 127	57 Km	₹ 7,251.24

### 4. Total Cost

Particulars	Sub-Category	Value
Mother Vessel	THC at Vizhinjam	<b>₹ 9,619.65</b>
	VRC at Vizhinjam	₹ 9,130.00
		₹ 489.65
Feeder Vessel	VRC at Vizhinjam	<b>₹ 23,285.90</b>
	Freight from Vizhinjam to Cochin	₹ 489.65
	THC at Cochin	₹ 10,345.61
	VRC at Cochin	₹ 8,748.69
Road Freight	-	₹ 3,701.95
<b>Total Cost</b>	-	<b>₹ 7,251.25</b>
		<b>₹ 40,156.78</b>

## TOTAL LOGISTICS COST IF CONTAINER IS TRANSPORTED TO DESTINATION FROM VIZHINJAM

The Consultant has assessed total logistics cost per TEU by considering an example of a 20' loaded container arriving in a 25,000 GRT vessel at Vizhinjam Port. Container is unloaded at Vizhinjam and delivered in Alappuzha District via road route.

### 5. Mother Vessel at Vizhinjam

#### A. THC at Vizhinjam

Cost per Container	Dollar to Rupee Conversion	THC
\$ 110	83 Rupees per Dollar	₹ 9,130.00

B. VRC at Vizhinjam

Cost per 20' TEU	Unit/Quantity	Value
Port Dues	Per GRT of Vessel	\$ 0.0551
<b>Total Port Due</b> (Port Dues x GRT per TEU x Dollar to Rupee Rate)	(0.0551 x 24.26 x 83)	<b>₹ 111.39</b>
Pilotage	Per GRT of Vessel	\$ 0.1271
<b>Total Pilotage</b> (Pilotage x GRT per TEU x Dollar to Rupee Rate)	(0.1271 x 24.26 x 83)	<b>₹ 256.95</b>
Berth Hire Charges	Per GRT of Vessel per Hour	\$ 0.0025
<b>Total Berth Hire Charges</b> (Berth Hire Charges x Average Turnaround time x GRT per TEU x Dollar to Rupee Rate)	(0.0025 x 24 x 24.36 x 83)	<b>₹ 121.30</b>
<b>Total VRC</b>		<b>₹ 489.65</b>

6. Road Freight

Cost per Km	Distance from Vizhinjam to Alappuzha	Value
₹ 127	175 Km	₹ 22,262.57

7. Total Cost

Particulars	Sub-Category	Value
Mother Vessel		<b>₹ 9,619.65</b>
	THC at Vizhinjam	₹ 9,130.00
	VRC at Vizhinjam	₹ 489.65
Road Freight	-	<b>₹ 22,262.57</b>

<b>Total Cost</b>	-	<b>₹ 29,558.22</b>
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From the above assessment, it is clear that for a container destined for Alappuzha district it will be economical for the end user to take the delivery from Vizhinjam port rather than getting it trans-shipped to Cochin through a feeder vessel. In fact, the average share of Cochin Port VRC in Total Cost is found to be 5%. Hence, a volume discount of up to 85% on VRC would not significantly alter the economic cost of delivery.

The Logistics Cost analysis is extended to multiple districts within the hinterland of Cochin and Vizhinjam port to understand, from end user perspective, which port would stand economical. Table below provides the details for the same.

District Name	State/Region	Freight From Vizhinjam	Freight From ICTT via Vizhinjam	Economic Port
Alappuzha	South Kerala	29,558	40,157	Vizhinjam
Bengaluru	Karnataka	96,855	100,711	Vizhinjam
Chengalpattu	Tamil Nadu	96,600	113,305	Vizhinjam
Chennai	Tamil Nadu	104,488	121,065	Vizhinjam
Chikkamagaluru	Karnataka	128,531	87,353	ICTT
Coimbatore	Tamil Nadu	70,267	57,331	ICTT
Cuddalore	Tamil Nadu	86,169	102,874	Vizhinjam
Dakshina Kannada	Karnataka	92,657	102,365	Vizhinjam
Dharmapuri	Tamil Nadu	81,716	85,572	Vizhinjam
Dindigul	Tamil Nadu	51,694	71,579	Vizhinjam
Ernakulam	Central Kerala	37,191	34,178	ICTT
Erode	Tamil Nadu	68,231	69,289	Vizhinjam
Hassan	Karnataka	121,026	97,276	ICTT
Idukki	Central Kerala	37,318	45,500	Vizhinjam
Kancheepuram	Tamil Nadu	98,000	114,832	Vizhinjam
Kanniyakumari	Tamil Nadu	17,473	72,215	Vizhinjam
Kannur	North Kerala	73,193	67,890	ICTT
Karur	Tamil Nadu	61,744	72,724	Vizhinjam
Kasaragod	North Kerala	84,515	79,212	ICTT
Kollam	South Kerala	17,600	51,479	Vizhinjam
Kottayam	South Kerala	28,540	41,302	Vizhinjam
Kozhikode	North Kerala	61,998	56,186	ICTT
Krishnagiri	Tamil Nadu	87,950	91,806	Vizhinjam
Madurai	Tamil Nadu	45,587	66,745	Vizhinjam

Malappuram	North Kerala	55,892	54,023	ICTT
Mandya	Karnataka	95,710	93,587	ICTT
Mysuru	Karnataka	96,728	87,226	ICTT
Nagapattinam	Tamil Nadu	80,444	101,983	Vizhinjam
Namakkal	Tamil Nadu	67,087	75,395	Vizhinjam
Nilgiris	Tamil Nadu	81,080	70,052	ICTT
Palakkad	Central Kerala	53,220	51,479	ICTT
Pathanamthitta	South Kerala	23,070	48,553	Vizhinjam
Ramanagara	Karnataka	101,816	96,895	ICTT
Ramanathapuram	Tamil Nadu	46,987	81,247	Vizhinjam
Salem	Tamil Nadu	73,447	77,812	Vizhinjam
Tenkasi	Tamil Nadu	24,215	58,730	Vizhinjam
Thanjavur	Tamil Nadu	70,012	91,552	Vizhinjam
Theni	Tamil Nadu	51,057	57,076	Vizhinjam
Thiruvallur	Tamil Nadu	103,724	120,302	Vizhinjam
Trivandrum	South Kerala	10,222	60,129	Vizhinjam
Thoothukudi	Tamil Nadu	30,830	72,088	Vizhinjam
Thrissur	Central Kerala	45,078	41,938	ICTT
Tirupathur	Tamil Nadu	87,568	93,969	Vizhinjam
Tiruppur	Tamil Nadu	65,814	63,691	ICTT
Tumakuru	Karnataka	106,523	89,771	ICTT
Vellore	Tamil Nadu	96,600	106,308	Vizhinjam
Viluppuram	Tamil Nadu	83,116	100,202	Vizhinjam
Virudhunagar	Tamil Nadu	39,099	69,671	Vizhinjam
Wayanad	North Kerala	69,122	64,200	ICTT

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## **ANNEXURE: YEAR-WISE TRAFFIC PROJECTIONS**

### Total projected ICTT traffic with 16.0 m draft ('000 TEUs)

Year	Realistic Scenario				Pessimistic Scenario			
	Gateway	Foreign Transshipment	Coastal Transshipment	Total	Gateway	Foreign Transshipment	Coastal Transshipment	Total
2025-26	669	67	36	<b>772</b>	669	67	36	<b>772</b>
2026-27	505	55	47	<b>606</b>	162	18	15	<b>195</b>
2027-28	535	58	50	<b>643</b>	173	19	16	<b>208</b>
2028-29	567	311	303	<b>1,181</b>	185	270	267	<b>723</b>
2029-30	600	315	306	<b>1,222</b>	198	272	268	<b>738</b>
2030-31	636	319	309	<b>1,265</b>	212	273	270	<b>755</b>
2031-32	674	323	313	<b>1,310</b>	227	275	271	<b>773</b>
2032-33	715	328	317	<b>1,359</b>	243	277	272	<b>792</b>
2033-34	757	332	321	<b>1,410</b>	260	278	274	<b>812</b>
2034-35	802	337	325	<b>1,464</b>	278	280	276	<b>834</b>
2035-36	850	342	329	<b>1,522</b>	298	283	277	<b>858</b>
2036-37	901	348	334	<b>1,583</b>	318	285	279	<b>883</b>
2037-38	955	354	339	<b>1,648</b>	341	287	281	<b>910</b>
2038-39	1,012	360	344	<b>1,716</b>	365	290	284	<b>938</b>
2039-40	1,072	366	350	<b>1,789</b>	390	293	286	<b>969</b>
2040-41	1,136	373	356	<b>1,866</b>	417	296	289	<b>1,002</b>
2041-42	1,204	381	362	<b>1,947</b>	447	299	291	<b>1,037</b>
2042-43	1,276	388	369	<b>2,034</b>	478	302	294	<b>1,074</b>

### Total projected ICTT traffic with 14.5 m draft ('000 TEUs)

Year	Realistic Scenario				Pessimistic Scenario			
	Gateway	Foreign Transshipment	Coastal Transshipment	Total	Gateway	Foreign Transshipment	Coastal Transshipment	Total
2025-26	669	67	36	<b>772</b>	669	67	36	<b>772</b>
2026-27	505	55	47	<b>606</b>	162	18	15	<b>195</b>
2027-28	525	57	49	<b>630</b>	168	18	15	<b>201</b>
2028-29	545	59	51	<b>655</b>	174	19	16	<b>209</b>
2029-30	567	62	53	<b>681</b>	180	20	17	<b>216</b>
2030-31	589	64	55	<b>708</b>	186	20	17	<b>224</b>
2031-32	613	67	57	<b>736</b>	193	21	18	<b>232</b>
2032-33	637	69	59	<b>765</b>	200	22	18	<b>240</b>
2033-34	662	72	62	<b>795</b>	207	23	19	<b>249</b>
2034-35	688	75	64	<b>827</b>	214	24	20	<b>257</b>
2035-36	715	78	67	<b>860</b>	222	24	20	<b>267</b>
2036-37	744	81	69	<b>894</b>	230	25	21	<b>276</b>
2037-38	773	84	72	<b>929</b>	238	26	22	<b>286</b>
2038-39	804	87	75	<b>966</b>	246	27	23	<b>296</b>
2039-40	836	91	78	<b>1,004</b>	255	28	23	<b>307</b>
2040-41	869	95	81	<b>1,044</b>	264	29	24	<b>318</b>
2041-42	903	98	84	<b>1,085</b>	274	30	25	<b>329</b>
2042-43	939	102	87	<b>1,129</b>	284	31	26	<b>341</b>

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## **ANNEXURE – REVENUE SCHEDULE**

		Revenue Schedule																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
INR Crore		01-Oct-2027	01-Apr-2028	01-Apr-2029	01-Apr-2030	01-Apr-2031	01-Apr-2032	01-Apr-2033	01-Apr-2034	01-Apr-2035	01-Apr-2036	01-Apr-2037	01-Apr-2038	01-Apr-2039	01-Apr-2040	01-Apr-2041	01-Apr-2042	01-Apr-2043	
		31-Mar-2028	31-Mar-2029	31-Mar-2030	31-Mar-2031	31-Mar-2032	31-Mar-2033	31-Mar-2034	31-Mar-2035	31-Mar-2036	31-Mar-2037	31-Mar-2038	31-Mar-2039	31-Mar-2040	31-Mar-2041	31-Mar-2042	31-Mar-2043		
		183	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365		
		2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043		

<b>ICTT Traffic with 16.0 m Draft</b>																	
Foreign Gateway Traffic	TEUs	1,38,054	2,91,794	3,09,216	3,27,679	3,47,243	3,67,977	3,89,948	4,13,230	4,37,904	4,64,050	4,91,757	5,21,119	5,52,234	5,85,206	6,20,147	6,57,175
Coastal Gateway Traffic	TEUs	1,30,031	2,74,837	2,91,246	3,08,636	3,27,064	3,46,592	3,67,287	3,89,216	4,12,456	4,37,082	4,63,180	4,90,835	5,20,142	5,51,198	5,84,109	6,18,985
Foreign Transshipment	TEUs	29,080	3,11,465	3,15,135	3,19,024	3,23,145	3,27,512	3,32,141	3,37,045	3,42,242	3,47,750	3,53,586	3,59,771	3,66,325	3,73,271	3,80,631	3,88,431
Coastal Transshipment	TEUs	25,007	3,02,855	3,06,011	3,09,356	3,12,900	3,16,655	3,20,635	3,24,852	3,29,322	3,34,058	3,39,077	3,44,395	3,50,031	3,56,004	3,62,333	3,69,041
<b>Total ICTT Traffic with 16.0 m Draft</b>	<b>TEUs</b>	<b>3,22,172</b>	<b>11,80,951</b>	<b>12,21,609</b>	<b>12,64,694</b>	<b>13,10,352</b>	<b>13,58,737</b>	<b>14,10,010</b>	<b>14,64,344</b>	<b>15,21,923</b>	<b>15,82,940</b>	<b>16,47,600</b>	<b>17,16,120</b>	<b>17,88,732</b>	<b>18,65,679</b>	<b>19,47,221</b>	<b>20,33,631</b>

<b>ICTT Traffic with 14.5 m Draft</b>																	
Foreign Gateway Traffic	TEUs	1,35,461	2,80,939	2,92,128	3,03,766	3,15,869	3,28,459	3,41,553	3,55,173	3,69,339	3,84,074	3,99,401	4,15,344	4,31,926	4,49,176	4,67,118	4,85,782
Coastal Gateway Traffic	TEUs	1,27,514	2,64,301	2,74,665	2,85,437	2,96,635	3,08,276	3,20,375	3,32,953	3,46,028	3,59,620	3,73,749	3,88,437	4,03,705	4,19,578	4,36,079	4,53,233
Foreign Transshipment	TEUs	28,534	59,179	61,535	63,987	66,536	69,188	71,947	74,815	77,800	80,903	84,132	87,490	90,983	94,617	98,396	1,02,328
Coastal Transshipment	TEUs	24,523	50,829	52,822	54,894	57,048	59,286	61,613	64,032	66,547	69,161	71,878	74,703	77,639	80,692	83,865	87,164
<b>Total ICTT Traffic with 14.5 m Draft</b>	<b>TEUs</b>	<b>3,16,032</b>	<b>6,55,248</b>	<b>6,81,151</b>	<b>7,08,084</b>	<b>7,36,089</b>	<b>7,65,209</b>	<b>7,95,488</b>	<b>8,26,974</b>	<b>8,59,714</b>	<b>8,93,758</b>	<b>9,29,160</b>	<b>9,65,973</b>	<b>10,04,254</b>	<b>10,44,062</b>	<b>10,85,459</b>	<b>11,28,507</b>

<b>Difference in Traffic</b>																	
Foreign Gateway Traffic	TEUs	2,593	10,854	17,088	23,913	31,374	39,518	48,394	58,058	68,564	79,975	92,356	1,05,775	1,20,307	1,36,030	1,53,029	1,71,393
Coastal Gateway Traffic	TEUs	2,517	10,536	16,582	23,199	30,429	38,317	46,911	56,263	66,427	77,462	89,431	1,02,398	1,16,436	1,31,620	1,48,030	1,65,751
Foreign Transshipment	TEUs	546	2,52,286	2,53,599	2,55,037	2,56,609	2,58,324	2,60,194	2,62,230	2,64,443	2,66,846	2,69,454	2,72,281	2,75,342	2,78,654	2,82,235	2,86,103
Coastal Transshipment	TEUs	484	2,52,026	2,53,189	2,54,461	2,55,852	2,57,369	2,59,022	2,60,820	2,62,775	2,64,897	2,67,199	2,69,693	2,72,393	2,75,313	2,78,468	2,81,877
<b>Total Difference in Traffic</b>	<b>TEUs</b>	<b>6,140</b>	<b>5,25,702</b>	<b>5,40,458</b>	<b>5,56,610</b>	<b>5,74,263</b>	<b>5,93,528</b>	<b>6,14,521</b>	<b>6,37,370</b>	<b>6,62,209</b>	<b>6,89,181</b>	<b>7,18,440</b>	<b>7,50,147</b>	<b>7,84,478</b>	<b>8,21,617</b>	<b>8,61,762</b>	<b>9,05,124</b>

<b>Laden Traffic</b>																	
Foreign Gateway Traffic	TEUs	1,973	8,262	13,006	18,202	23,881	30,079	36,836	44,191	52,188	60,874	70,297	80,512	91,573	1,03,541	1,16,479	1,30,457
Coastal Gateway Traffic	TEUs	1,487	6,225	9,798	13,708	17,980	22,641	27,719	33,245	39,251	45,772	52,844	60,506	68,801	77,773	87,469	97,941
Foreign Transshipment	TEUs	323	1,49,004	1,49,780	1,50,629	1,51,557	1,52,570	1,53,674	1,54,877	1,56,184	1,57,603	1,59,144	1,60,813	1,62,621	1,64,577	1,66,692	1,68,977
Coastal Transshipment	TEUs	364	1,89,470	1,90,344	1,91,301	1,92,346	1,93,487	1,94,729	1,96,081	1,97,551	1,99,147	2,00,877	2,02,752	2,04,781	2,06,977	2,09,349	2,11,911

<b>Empty Traffic</b>																	
Foreign Gateway Traffic	TEUs	619	2,592	4,081	5,711	7,493	9,439	11,559	13,867	16,376	19,101	22,058	25,264	28,734	32,490	36,550	40,936
Coastal Gateway Traffic	TEUs	1,030	4,310	6,784	9,491	12,449	15,676	19,192	23,018	27,176	31,691	36,587	41,892	47,635	53,847	60,560	67,811
Foreign Transshipment	TEUs	224	1,03,282	1,03,820	1,04,408	1,05,052	1,05,754	1,06,520	1,07,353	1,08,259	1,09,243	1,10,311	1,11,468	1,12,721	1,14,077	1,15,543	1,17,126
Coastal Transshipment	TEUs	120	62,556	62,845	63,160	63,506	63,882	64,292	64,739	65,224	65,751	66,322	66,941	67,611	68,336	69,119	69,965
<b>Total Traffic</b>	<b>TEUs</b>	<b>6,140</b>	<b>5,25,702</b>	<b>5,40,458</b>	<b>5,56,610</b>	<b>5,74,263</b>	<b>5,93,528</b>	<b>6,14,521</b>	<b>6,37,370</b>	<b>6,62,209</b>	<b>6,89,181</b>	<b>7,18,440</b>	<b>7,50,147</b>	<b>7,84,478</b>	<b>8,21,617</b>	<b>8,61,762</b>	<b>9,05,124</b>

<b>Tariff</b>																	
<b>Terminal Handling Charges</b>																	
Foreign Gateway Tariff - Laden	INR per TEU	7,797.13	8,031.05	8,271.98	8,520.14	8,775.74	9,039.02	9,310.19	9,589.49	9,877.18	10,173.49	10,478.70	10,793.06	11,116.85	11,450.36	11,793.87	12,147.68
Foreign Gateway Tariff - Empty	INR per TEU	5,572.96	5,740.15	5,912.35	6,089.72	6,272.42	6,460.59	6,654.41	6,854.04	7,059.66	7,271.45	7,489.59	7,714.28	7,945.71	8,184.08	8,429.60	8,682.49
Coastal Gateway Tariff - Laden	INR per TEU	5,033.43	5,184.43	5,339.96	5,500.16	5,665.17	5,835.12	6,010.18	6,190.48	6,376.20	6,567.48	6,764.51	6,967.44	7,176.47	7,391.76	7,613.51	7,841.92
Coastal Gateway Tariff - Empty	INR per TEU	3,293.16	3,391.96	3,493.72	3,598.53	3,706.49	3,817.68	3,932.21	4,050.18	4,171.68	4,296.83	4,425.74	4,558.51	4,695.26	4,836.12	4,981.21	5,130.64
Foreign Transshipment Tariff - Laden (per Move)	INR per TEU	3,077.11	3,169.42	3,264.51	3,362.44	3,463.32	3,567.22	3,674.23	3,784.46	3,897.99	4,014.93	4,135.38	4,259.44	4,387.22	4,518.84	4,654.41	4,794.04
Foreign Transshipment Tariff - Empty (per Move)	INR per TEU	2,332.52	2,402.50	2,474.57	2,548.81	2,625.28	2,704.03	2,785.15	2,868.71	2,954.77	3,043.41	3,134.72	3,228.76	3,325.62	3,425.39	3,528.15	3,634.00
Coastal Transshipment Tariff - Laden (per Move)	INR per TEU	1,887.93	1,944.57	2,002.91	2,062.99	2,124.88	2,188.63	2,254.29	2,321.92	2,391.57	2,463.32	2,537.22	2,613.34	2,691.74	2,772.49	2,855.67	2,941.34
Coastal Transshipment Tariff - Empty (per Move)	INR per TEU	1,559.15	1,605.92	1,654.10	1,703.72	1,754.83	1,807.48	1,861.70	1,917.55	1,975.08	2,034.33	2,095.36	2,158.22	2,222.97	2,289.66	2,358.35	2,429.10

<b>Revenue</b>																	
Port Dues	INR Crore	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pilotage	INR Crore	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Berth Hire	INR Crore	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CoPA Royalty from Terminal Handling	INR Crore	0.54	43.87	47.91	52.42	57.46	63.07	69.33	76.30	84.07	92.72	102.36	113.07	124.99	138.25	152.97	169.33
<b>Total Revenue</b>	<b>INR Crore</b>	<b>0.54</b>	<b>43.87</b>	<b>47.91</b>	<b>52.42</b>	<b>57.46</b>	<b>63.07</b>	<b>69.33</b>	<b>76.30</b>	<b>84.07</b>	<b>92.72</b>	<b>102.36</b>	<b>113.07</b>	<b>124.99</b>	<b>138.25</b>	<b>152.97</b>	<b>169.33</b>

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## **ANNEXURE – FINANCIAL ANALYSIS**

Cash Flow Statement (With Debt)																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
	01-Apr-2026	01-Apr-2027	01-Apr-2028	01-Apr-2029	01-Apr-2030	01-Apr-2031	01-Apr-2032	01-Apr-2033	01-Apr-2034	01-Apr-2035	01-Apr-2036	01-Apr-2037	01-Apr-2038	01-Apr-2039	01-Apr-2040	01-Apr-2041	01-Apr-2042	
INR Crore	31-Mar-2027	31-Mar-2028	31-Mar-2029	31-Mar-2030	31-Mar-2031	31-Mar-2032	31-Mar-2033	31-Mar-2034	31-Mar-2035	31-Mar-2036	31-Mar-2037	31-Mar-2038	31-Mar-2039	31-Mar-2040	31-Mar-2041	31-Mar-2042	31-Mar-2043	
	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	

Gross Cash Inflow																		
Port Dues	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pilotage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Berth Hire	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CoPA Royalty from Terminal Handling	-	0.54	43.87	47.91	52.42	57.46	63.07	69.33	76.30	84.07	92.72	102.36	113.07	124.99	138.25	152.97	169.33	
<b>Total Gross Revenue</b>	-	<b>0.54</b>	<b>43.87</b>	<b>47.91</b>	<b>52.42</b>	<b>57.46</b>	<b>63.07</b>	<b>69.33</b>	<b>76.30</b>	<b>84.07</b>	<b>92.72</b>	<b>102.36</b>	<b>113.07</b>	<b>124.99</b>	<b>138.25</b>	<b>152.97</b>	<b>169.33</b>	

Gross Cash Outflow																		
Equity	114.15	58.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Debt Repaid	-	13.49	26.90	26.90	26.90	26.90	26.90	26.90	26.90	26.90	26.90	26.90	26.90	26.90	26.90	26.90	26.90	
Interest Repaid	-	9.94	18.83	17.48	16.14	14.79	13.45	12.10	10.76	9.41	8.07	6.72	5.38	4.03	2.69	1.34	-0.00	
Opex	-	22.83	47.81	50.20	52.71	55.35	58.11	61.02	64.07	67.27	70.64	74.17	77.88	81.77	85.86	90.15	94.66	
<b>Total Gross Outflow</b>	<b>114.15</b>	<b>105.01</b>	<b>93.53</b>	<b>94.58</b>	<b>95.74</b>	<b>97.03</b>	<b>98.46</b>	<b>100.02</b>	<b>101.72</b>	<b>103.58</b>	<b>105.60</b>	<b>107.79</b>	<b>110.15</b>	<b>112.70</b>	<b>115.44</b>	<b>118.39</b>	<b>121.55</b>	

<b>Net Cash Flow</b>	<b>-114.15</b>	<b>-104.48</b>	<b>-49.66</b>	<b>-46.67</b>	<b>-43.32</b>	<b>-39.58</b>	<b>-35.39</b>	<b>-30.69</b>	<b>-25.42</b>	<b>-19.51</b>	<b>-12.88</b>	<b>-5.43</b>	<b>2.92</b>	<b>12.29</b>	<b>22.80</b>	<b>34.58</b>	<b>47.78</b>
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IRR	0.0%
NPV	-382.93

Cash Flow Statement (With Grant)																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
	01-Apr-2026	01-Apr-2027	01-Apr-2028	01-Apr-2029	01-Apr-2030	01-Apr-2031	01-Apr-2032	01-Apr-2033	01-Apr-2034	01-Apr-2035	01-Apr-2036	01-Apr-2037	01-Apr-2038	01-Apr-2039	01-Apr-2040	01-Apr-2041	01-Apr-2042	
INR Crore	31-Mar-2027	31-Mar-2028	31-Mar-2029	31-Mar-2030	31-Mar-2031	31-Mar-2032	31-Mar-2033	31-Mar-2034	31-Mar-2035	31-Mar-2036	31-Mar-2037	31-Mar-2038	31-Mar-2039	31-Mar-2040	31-Mar-2041	31-Mar-2042	31-Mar-2043	
	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	

Gross Cash Inflow																		
Port Dues	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pilotage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Berth Hire	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CoPA Royalty from Terminal Handling	-	0.54	43.87	47.91	52.42	57.46	63.07	69.33	76.30	84.07	92.72	102.36	113.07	124.99	138.25	152.97	169.33	
<b>Total Gross Revenue</b>	-	<b>0.54</b>	<b>43.87</b>	<b>47.91</b>	<b>52.42</b>	<b>57.46</b>	<b>63.07</b>	<b>69.33</b>	<b>76.30</b>	<b>84.07</b>	<b>92.72</b>	<b>102.36</b>	<b>113.07</b>	<b>124.99</b>	<b>138.25</b>	<b>152.97</b>	<b>169.33</b>	

Gross Cash Outflow																		
Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Debt Repaid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Interest Repaid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Opex	-	22.83	47.81	50.20	52.71	55.35	58.11	61.02	64.07	67.27	70.64	74.17	77.88	81.77	85.86	90.15	94.66	
<b>Total Gross Outflow</b>	-	<b>22.83</b>	<b>47.81</b>	<b>50.20</b>	<b>52.71</b>	<b>55.35</b>	<b>58.11</b>	<b>61.02</b>	<b>64.07</b>	<b>67.27</b>	<b>70.64</b>	<b>74.17</b>	<b>77.88</b>	<b>81.77</b>	<b>85.86</b>	<b>90.15</b>	<b>94.66</b>	

<b>Net Cash Flow</b>	-	<b>-22.29</b>	<b>-3.94</b>	<b>-2.29</b>	<b>-0.29</b>	<b>2.11</b>	<b>4.96</b>	<b>8.31</b>	<b>12.23</b>	<b>16.80</b>	<b>22.09</b>	<b>28.19</b>	<b>35.20</b>	<b>43.22</b>	<b>52.39</b>	<b>62.82</b>	<b>74.67</b>
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IRR	26.4%
NPV	109.90



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