

A COMPARATIVE STUDY OF CARGO HANDLED STATEWISE AT NON-MAJOR PORTS IN INDIA

*(A Project report Submitted for partial fulfillment of the
requirements for award of degree of)*

MASTER OF BUSINESS ADMINISTRATION

In

Port and Shipping Management

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DECLARATION

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This is to certify that the project report entitled "**A COMPARATIVE STUDY OF CARGO HANDLED STATEWISE AT NON-MAJOR PORTS IN INDIA**", submitted to the School of Maritime Management, Indian Maritime University, Chennai Campus., in partial fulfillment for the award of the degree of Master of Business Administration in Port & Shipping Management, is a record of work carried out entirely by **HARIKRISHNA.S, Reg. No. 2003304014.**

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION AND MEANING

Investments have poured in from all around the world as a result of economic liberalization. The ability to attract investment from around the world is largely determined by the ease with which trade can be conducted and the infrastructure available. Infrastructure development is one of the most important variables in determining a country's economic progress. Along with standardization and trade liberalization, faster, more dependable, and less expensive transportation services are assisting in the international integration of manufacturing processes. Ports can thus be considered the entry point for international trade, allowing for smooth export and import. Looking back through time, it is easy to see how ports have influenced the development of major cities all around the world. Both military and economic considerations motivated early port development. "A harbor or haven where ships may anchor, or a harbor area with marine terminal facilities for transferring cargo/passengers between ships and land conveyance," according to Gerhardt Muller. The word 'marine' in this definition might suggest that a port is a territorial unit created on a shoreline. Infrastructure facilities, such as port facilities, are not immediately productive. Although they are not directly used as commercial items, they support a variety of productive activities. Furthermore, infrastructure is the lifeblood of any commercial activity, and effective infrastructure boosts productivity significantly. Presently the function of a port is not only limited but has expanded to a logistical platform.

Types of port

Ports are classed in a variety of ways based on their ownership and management, the services they provide, the volume of commerce they handle, and the sorts of facilities they offer. However, in this study, we will identify ports based on their capacity or the volume of commerce they handle. As a result, it may be classified into two categories: 'Major Ports/ Main Ports' and 'Non-Major Ports'.

Major port/Main port:

When there are numerous ports in an area, one of them is typically designated as the Main Port. Because the term 'main' is frequently employed in reference to overall cargo throughput volume, this is the case. In this context, the term "main port" typically refers to the largest, busiest, and hence most significant port.

Non-Major port:

Minor ports are generally ones with a lower commerce volume or less effort to support the Major Ports. They are administered at lower levels of government, such as the state level in India. It allows for more administrative freedom. However, they may appear to be of little economic significance. In India, the names Minor and Major refer to the several levels of government. A 'Hub Port' is a Main Port that receives assistance from multiple additional ports. A hub port is a large port to which several shipping lines send goods from distant ports. The distant ports that are aiding are known as 'Feeder ports' since they feed the Hub Port.

Functions of ports

In a linked world, trade is vital and accounts for a significant portion of the global economy. It can surely be described as trade amplifiers in terms of overall volume of commerce done via ports. Port functions may be classified into three types:

- 1) core function
- 2) supporting function
- 3) Supportive Function

1)**Core Functions**-The port's principal responsibilities are referred to as core functions. These might be considered the goal with which the port was constructed. For example, passenger and freight transit, port superstructure building and maintenance, towage, and mooring.

2)**Supportive Functions**- Additional jobs assist the port's primary function and are, by definition, related to the core business. Example: Bunkering for vessels, cargo collection for trades, ship repair services, and the Port Traffic Management System etc.

3)**Complimentary functions**- They are further apart than supporting functions. These activities are not directly related to the primary business.

India has 12 main ports and another 224 minor ports that handle export and import cargo, with a total coastline of about 7500 kilometers. In 2019-20, India's 12 largest ports handled over 57 percent of total cargo traffic. Maritime transport accounts for roughly 95 percent of India's commercial volume and 70 percent of its trading value, according to the ministry of shipping.

1.2 OBJECTIVES OF THE STUDY

This study has three main objectives:

1. To analyze the throughput of Non-Major ports.
2. To study about the Growth rate of Non-major ports statewise.
3. To analyze the trend of cargo traffic in Non-Major ports.
4. To suggest findings for the above study.

These objectives help to assess the cargo handled at Non-Major ports which is dominating in cargo traffic compared to Major ports in India. Further it reveals the compounded annual growth rate (CAGR) of various Non-Major ports in India, which has also helped me to do a trend analysis for five more years.

1.3 SCOPE OF THE STUDY

Scope of study elaborates the boundaries of the research made. As far as this study is concerned, due to time constriction primary data was not incorporated in the study. The study totally relies upon secondary data which is published by Transport Research wing (TRW) of Ministry of Ports, Shipping and Waterways bringing out the "Basic Port Statistics of India" which was published in 2020, As we all know that Due to the COVID-19 epidemic, international marine commerce uncertainty will continue to be a major concern in 2020. Predicting the impact on marine commerce, as well as the timing and scope of the recovery, is difficult. Many elements are at play, all of which have a substantial impact on the prognosis. The path of the pandemic, the effectiveness of efforts to prevent further outbreaks, continued shifts in spending patterns, trends in consumer and business confidence, commodity price developments, and the ability of stimulus packages to boost growth and get the global economy back on track are all factors to consider.

In light of this, UNCTAD (United Nation's conference for trade and Development) anticipates a decrease in marine commerce volume in 2020, based on historical trends. In the recent past, India's economy has seen a minor reduction in economic growth, with Gross Value Added (GVA) at Basic Price falling to 4.1 percent in FY 2019-20 from 5.9 percent in FY 2018-19 and The growth in the cargo handled at Non-Major Ports decreased from 10.1% in 2018-19 to 5.6% in 2019-20. My study mainly focuses on the cargo handled in Non-Major Ports in India from 2008-20 provided by the Ministry of shipping India. Here in this study I have tried to analyze the overall throughput of cargo handled in Non-Major ports of India to study how Non major ports are contributing to Indian Maritime Industry.

1.4 RESEARCH METHODOLOGY

Research includes quantitative and qualitative study of cargo movement in Non-Major ports around India. The overall study includes the cargo traffic handled in Indian Non-Major ports situated in the west coast side of India and the east coast of India also the sea-islands like Andamannicobar and Lakshadweep, by analyzing the coastal and overseas cargo traffic in each ports during the study period helped me to evaluate the efficiency of the port, then the throughput details was used to analyze the trend of cargo traffic in the study period. the efficiency of the port can't only be estimated from the throughput details and cargo handling details which is provided by the basic ports stats, ministry of shipping India, there are other factors like equipment's which the ports uses and the management of port authority. the growth in cargo trafficking in Non-Major ports is mainly recorded in this study through interpreting data for the period 2008-20 which was taken from Ministry of Shipping, India to find the compounded annual growth rate of states in India from the Non-major ports situated in the states and also the data has helped to do a trend analysis for cargo handled in the particular states were the Non-

Major ports are present. Trend analysis for five years is totally based upon the provided data of Transport research wing of Ministry of ports, India. Based on the chosen objectives of the study an exploratory research was done on the particular data to examine the cargo handling trends at Non-major ports of India state wise.

1.5 LIMITATIONS

The lack of suitable primary data will be one of the study's major drawbacks. Secondary data is used to reflect more information and facts. As a result, the research follows a more linear course and time constraints was also a factor to collect the primary data. The whole study concentrates on the data which is published by the Transport research wing of Ministry of ports, India and certain other factors like equipment's used by ports and the administrative management done by the port authority to scrutinize the port efficiency was not able to collect due time constraints. And the data which I relied upon is only till 2020 which was published by the Transport research wing of Ministry of ports, obtaining the latest data on cargo handled in Non-Major ports is a bit difficult in this time frame.

CHAPTER 2

REVIEW OF THE LITERATURE

2.1 LITERATURE REVIEW

- **Basic port statistics of India 2020-21, ministry of port and shipping and waterways transport research wing, New Delhi. Sh. Sunil Kumar Singh (Adviser, Statistics), Smt.Priyanka Kulshreshtha(Director), Ms. Seema Joshi (Deputy Director), Sh. jag dish Chand (Senior Statistical Officer).**

Maritime transportation is an important part of a country's social and economic growth. It has an impact on the rate, structure, and pattern of growth. Shipbuilding and Ship-Repair, Major Ports, National Waterways, and Inland Water Transport are all covered by the Ministry of Ports, Shipping, and Waterways. It is critical to estimate numerous characteristics linked to ship traffic and service times in models used to calculate the optimal port capacity. The port statistics are used to estimate these characteristics. The port statistics allow for the assessment of the port's contribution to the national economy and the forecasting of future traffic trends. They also provide crucial information for the building of new ports. The raw data from the Indian Port is categorized in this study, and frequency analysis are done. Major Ports, Railway Priorities, Road and Water Transport Utilization, Petrol Rationing, and Producer Gas are among the tasks assigned to the Department of Water Transport. To meet the expanding demands of international commerce, ports' capacity in terms of berths and cargo handling equipment must be greatly increased. The Ports, Shipping, and Waterways business must be able to transport a greater proportion of sea-borne trade in indigenous bottoms.

- **Bose, S. K. (2001). Cargo Handling of Major Ports in India: A Case Study. *Economic and Political Weekly*, 3284-3288.**

This paper attempts to analyze the performance of major ports in India taking into account the absolute cargo handled by them during 1951-52 to 1992-93. A particular focus of the study is the Calcutta-Haldia Port in the same period, with a view to determining the reasons for its deteriorating performance. The Economic and Political Weekly, published from Mumbai, is an Indian institution which enjoys a global reputation for excellence in independent scholarship and critical inquiry. First published in 1949 as the Economic Weekly and since 1966 as the Economic and Political Weekly, EPW, as the journal is.

- **Sinha, D., & Bagodi, V. (2019). A causal review of dynamics in Indian ports. *IIM Kozhikode Society & Management Review*, 8(1), 60-73.**

India has about 200 ports along its coastline, which is about 7,500 kilometers long. However, none of these ports feature in the world's top 20. Several studies on port efficiency indicate the need to benchmark the productivity of ports with global standards. Productivity is measured in terms of cargo (in tonnes, or 20-foot equivalent unit, TEU) handled per hour or so. The outcome of enhanced productivity is quicker turnaround time of ships. The productivity of the major Indian ports does not match the global standards. In order to improve their efficiency, the government-managed ports have initiated privatization of their terminals and outsourcing of cargo handling services since 1991. Yet, the ports are lagging behind major ports across the world. A major reason for the inefficiencies of the Indian ports is because of its pricing mechanism and its ability to take proactive decision, especially with regard to capacity enhancement of the terminals. This is so because in major Indian ports, the ship pays for the number of days it stays in the berth. In inefficient ports, ships stay for long duration and as a result the port earns on account of its inefficiencies. These

ports fail to recognize the paradox, and as such take corrective action only after ships divert to other ports. Ports projects have long gestation periods. So far, no study encompassing the dimension's port pricing, productivity and efficiency has been undertaken by researchers. In this article we attempt to explore the causes that affect the performance of Indian ports. We present a cause and effect analysis to explain the dynamics arising out of the interactions of productivity, infrastructure, and pricing mechanism of an Indian port system. A system dynamics framework has been used to develop the causal model. Four feedback loops were identified, which explain the governing rules and the paradoxes impacting the performance of Indian ports.

- **Shanmugam, V., & TSR, N. (2020). Maritime Arbitration in India: The Analysis of a Redundant System. Available at SSRN 3588284.**

The requirement for an amicable resolution of business disputes has become an imperative need in a worldwide market defined by rapid economic expansions and broad logistical services. The installation of the aforementioned resolution mechanism has become a must for any nation aspiring to become an economic powerhouse, since corporations increasingly rely on marine trade routes for the transportation of commercial freight. As such, India is supposed to have a flawless conflict resolution framework. However, its Arbitration system has failed to reflect these desires. The development of sectoral Arbitration institutions and the execution of the 1996 Arbitration Act have done nothing to help the disadvantaged 'Maritime Arbitration' industry. By adopting an introspective and comparative analysis of the main international organizations against the domestic framework, this research paper seeks to assess the provisions that can remedy the gaps in the present legislative framework, consequently boosting the nation's prospects.

- **Adler, N., Hirte, G., Kumar, S., & Niemeier, H. M. (2021). The impact of specialization, ownership, competition and regulation on efficiency: a case study of Indian seaports. *Maritime Economics & Logistics*, 1-30.**

To evaluate seaport performance and explain the determinants of efficiency, we create a two-stage framework that includes specialization, ownership, competition, and tariff control. The non-parametric, slacks-based first-stage measure measures each port's technical efficiency. We create a collection of contextual factors for the second stage analysis, including an absolute measure of specialty and a berth-level measure of ownership structure. We construct spatial metrics that quantify the amount of competition as a function of distance to gauge competition. Following that, we apply this technique to major Indian seaports during a 21-year period, from 1995 to 2015. The preliminary findings indicate that average seaport efficiency has progressively grown over time. Specialization and external stakeholder engagement have considerable beneficial implications on seaport performance, according to the second-stage fixed effects regressions. Surprisingly, we show that rivalry between large and local seaports has a considerable detrimental influence on performance under a tiered governance system, possibly due to excessive infrastructure. Finally, it has been demonstrated that modifications in the regulating system improve efficiency over time.

The study was made in 2016 with the help of secondary data. The article shows an immediate requirement of actions towards the problems analyzed. The content is kept crisp and short. The study is made at different aspects so that root cause can be easily spotted. The study went through covering metropolitan cities, state level and national level. The author also finds it necessary to make note on how far it made an impact on different age groups and gender in the past 10 years. As a result of research across states and union territories, it was found that Tamil Nadu, Haryana and Andhra Pradesh had

faced 50 percentage higher fatality rates than all India average. Road accident statistics which was used for the study included data from 1970s to 2013 which provides a complete understanding on where we stand. As an interesting fact, male gender has higher rate of injuries and fatalities compared to female gender and there has been a significant increase in the number of accidents in a gap of 10 years. Study concluded that factors which contribute towards the risk of occurrence of accidents should be independently studied and implements integrated solutions.

- **Patel, G. R., & Sahu, P. K. (2017). Simultaneous dynamic demand estimation models for major seaports in India. *Transportation Letters, 9(3), 141-151.***

Because cargo throughput influences port planning and management, authorities such as port administrations and port operators need to be able to predict cargo quantities. The forecasting data aid planners and policymakers in making decisions about port investment, development, berth placement, port operation, and freight rate. The accuracy of the cargo prediction is critical to the port operating policy's performance. This work proposes an enhanced model known as the dynamic regression (DR) model for forecasting cargo demand concurrently for ports within a port system. The suggested model is estimated using historical cargo flow data from 11 major Indian ports from 1980 to 2014.

The average forecast error for most ports is determined to be less than 10%. All of the ports investigated are forecasted using the DR model through to 2019–2020. The model forecast is compared to the Ministry of Shipping, Government of India's estimates. The purpose of this research is to assist planners in making decisions on port infrastructure development, such as the building of new terminals and the upgrade of port access roads for India's main ports. The report would also be useful to shipping companies as they plan their investments in the Indian port industry.

- **Dasgupta, M. K., & Sinha, D. (2016). Impact of privatization of ports on relative efficiency of major ports of India. *Foreign Trade Review*, 51(3), 225-247.**

The purpose of this study is to determine the impact of liberalization on the efficiency of container terminals at India's main ports. The liberalization movement in India began in 1991. As a result, the union government of India privatized several of the country's main ports and cargo facilities. Using data envelopment analysis, the efficiency of privately operated terminals beneath major ports was compared to public container terminals in this study (DEA). The inverse of turnaround time per thousand twenty equivalent units (TEUs) was used as the output in this article's output-oriented DEA utilizing DEAP (Data Envelopment Analysis (Computer) Programme software. The study's findings reveal that, while privatization has a significant impact on container terminal efficiency, it is also influenced by other factors.

- **International Journal of Research in all Subjects in Multi Languages [Author: Dr. Jayraj Shah] [Subject: Commerce/Economics] Performance Evaluation of Kandla Port DR. JAYRAJ SHAH Head, Department of Economics, Smt. T. J. Patel, Commerce, College, Nadiad, Dt. Kheda, Gujarat Work Climate, Organizational Commitment, and Highway Safety in the Trucking Industry: Toward Causal Modeling of Large Truck Crashes by Carroll M. Graham, Aaron J. Scott, & Fredrick M. Nafukho (2008)**

Port performance and port economics are inextricably linked to a country's macroeconomic development. As a result, any changes in port traffic, operation, or port/port structure affect the national economy. Global economic growth slowed in 2013, according to UNCTAD, as economic activity in poor countries slowed and the position in rich nations improved only modestly. India's coastline is 7517 kilometers long, with 12 major ports and 200 minor

ports notified throughout the coast and islands. Kandla port is one of India's main ports. Kandla Port is India's grain and oil export and import hub. This self-sufficient port is one of the country's highest-earning ports. Petroleum, chemicals, and iron and steel machinery are among the most common imports, although the port also handles salt, textiles, and grain. The purpose of this research is to assess the performance of Kandla port throughout time. For the analysis, many performance criteria such as exports, imports, revenue, expenditure, profit, and employment are considered.

- **Kamble, S. S., Raoot, A. D., & Khanapuri, V. B. (2010). Improving port efficiency: a comparative study of selected ports in India. *International Journal of Shipping and Transport Logistics*, 2(4), 444-470.**

Seaports are critical in linking national supply chains to the global marketplace in the age of globalization. Many governments have made improving port operations a priority. One method to attain this goal is to assess current efficiency using the metrics established for the port industry.

Using data envelopment analysis on chosen input and output variables, this research assesses the efficiency of the main Indian seaports. Storage facilities, the number of berths, and the quantity of cargo handling appliances were among the input factors. Average overall turnaround time and average production per ship berth day were the two output variables considered. Six out of 12 ports were identified as efficient ports. Further, an attempt is made to identify various areas for improving the port efficiency based on interviews with port managers from a selected port in India, where the researchers had an opportunity to carry a research project. The interviews were based on a series of qualitative discussions pertaining to the efficiency of ports with the port managers. The study can thus form the baseline on which further

adaptation can be made to suit their specific needs.

➤ **Mahapatra, S. C., & Mohapatra, P. Market Trend Analysis on Cargo Handling of Indian Ports.**

Ports provide you direct access to global markets and a huge potential to expand your commerce with a variety of nations. The availability of ports is critical to many industrial and agricultural development initiatives. As a result, ports serve as engines of economic growth and development. Maritime transportation includes the shipping of commodities (cargo) and people by water, as well as ship harbor interface services such as pilotage, dredging, berthing, and navigational channel maintenance. They act as a link between coastal and interior transportation and play an important part in a country's economic growth. The backbone of global trade is maritime shipping.

So look at the cargo handling and traffic capacities of both big and little ports. The purpose of this study is to show the trends in Indian ports and their growth patterns. The research compares the productivity of large ports with non-major ports using descriptive data. Queuing theory is also used to determine productivity. Data was gathered from secondary sources.

➤ **Kuntoji, G., & Rao, S. (2015). A review on development of minor ports to improve the economy of developing country. *Aquatic Procedia*, 4, 256-263.**

India, Asia's second-largest country, has a 7500-kilometer coast line with 13 major ports and more than 200 lesser ports. Calcutta, Haldia, Paradip, Visakhapatnam, Ennore, Chennai, Tuticorin, Cochin, New Mangalore Port Trust (NMPT), Mormugao, Jawaharlal Nehru Port Trust (JNTP), Mumbai, and Kandla are the most important ports in India. Approximately 95% of the country's trade by volume (and 70% by value) is transported by sea. Major ports handle around 75% of overall cargo, with intermediate and small ports handling the balance.

As a result, shipping plays an essential part in India's transportation industry. "Technological advances in recent years in transport systems as a whole, and marine transport in particular, have made it vital to refocus the operation of ports in developing nations to address the problems given by these new technologies," according to the definition of port development. The growth of Karwar port is given as an example in this study. Karnataka has a 300-kilometer coastline with one large port, New Mangalore, and several lesser ports. Karwar port is located at Latitude 12°48' N and Longitude 74°7' E, near the state's northernmost point. Extension of the existing berth and land reclamation, dredging, and the construction of a POL loading jetty are all options for improving the situation. Finally, the growth of minor ports supports the development of big ports, which helps to boost the economy of emerging nations like India both directly and indirectly.

2.2 LITERATURE SURVEY

This minor comparative study is based upon the cargo handling in the Non-Major ports of India which are situated in the coastal areas of Indian sub-continent, here I have used various literature and journals as reference to sum up the whole study. The research topic mentioned in the review of literature are studies based upon Major ports and Non-Major ports and there are some international journals which I used as reference, was really helpful for my study. The authors of the studies mentioned above have given a vast idea on the port industry which helped me to analyse the data for my study. Major data for the study was taken from the Basic port Statistics 2020-21, which is published by the ministry of port and shipping, India. The references which I took were mostly talking about Major ports of India then the reference on Non-Major ports are limited and there is not much reference on Non-Major ports of India so I have taken other international studies for my reference. The studies which I took are basically related to the cargo traffic handled by major ports in

India and the efficiency of cargo handled in ports of in India. Capacity utilization, Average turnaround time and Average ship berth time were analyzed in different studies which I used for reference are limited in the study but most of the information comes from the Basic port statistics 2020-21, published by the ministry of port and shipping of India. No other questionnaire or survey was done during the study period. The overall study is based upon the reference which I took in the Review of literature. Reviews supported to a great extent and provided a systematic approach to study the overall cargo traffic Handled by Non-major ports of India.

2.3 LITERATURE GAP

The distance was little. The shipping sector in India has been the subject of several studies due to its immediate economic contribution. Authorities have kept a careful check on the movement of people and products from one location to another, and they have always strived to improve processes in order to achieve maximum productivity. Methods have obviously evolved, but not the overall perspective. Eminent figures have offered management theories that, if applied at the correct moment, may improve managerial actions. This demonstrates that studies and research have consistently produced improved results. As time passes, methods evolve, and individuals change as well. The literature for this study was gathered from diverse locations and at various times. The procedures employed as well as the data acquired were very similar. Future pathways proposed are in the proper direction.

CHAPTER 3

INDUSTRY PROFILE

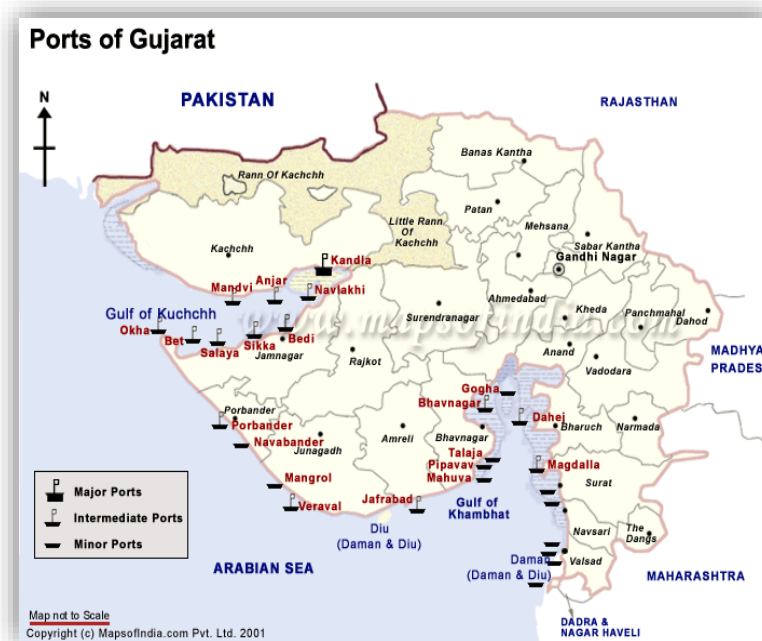
3.1 NON-MAJOR PORT INDUSTRY

Ports are significant economic and service providing entities because they serve as a hub for the interchange of two modes of transportation: marine and land, whether by rail or road. As a result, the most important feature of ports is their multimodal character. Along the coast and sea islands of India, there are 12 major ports and 212 recognized non-major ports with a total length of 7517 kilometers. Gujarat has emerged as the most important marine state in terms of port traffic, accounting for 40.4 percent of all cargo handled at Indian ports. It is also worth noting that Gujarat accounts for 67.1 percent of the cargo handled by non-major ports. Gujarat is followed by Andhra Pradesh, Maharashtra&Odisha, and Tamil Nadu in terms of overall port traffic in India. Along the peninsula's coast and sea islands, there are 212 non-major ports. Gujarat (48), Maharashtra (48), Goa (5), Daman & Diu (2), Karnataka (12), Kerala (17), Lakshadweep (10), Tamil Nadu (15), Puducherry (3), Andhra Pradesh (13), Orissa (14), West Bengal (1), and Andaman & Nicobar Island (1) are the states with the most ports (24). Only a few of the 212 non-major ports are well-developed and offer all-weather berthing facilities for cargo handling. 68 non-major ports were reported to have handled cargo traffic in 2020-21. Amongst the States, Gujarat has emerged as the premier maritime State in terms of port traffic and accounted for 40.4% of the total cargo handled at Indian ports. It is also noteworthy that about 67.1% of the cargo handled by non-major ports pertains to the State of Gujarat. In terms of total port traffic, Gujarat is followed by Andhra Pradesh, Maharashtra&Odisha, and Tamil Nadu with share of 8.7% in India's total seaborne traffic. In order to improve their performance and stay up with regional and global competition, ports and terminals in India have used

various privatization initiatives. Though most privatization options have an impact on port management and operations, this study focuses on the impact of the strategies on core port operations, which influence port output and efficiency concurrently. This is necessary in order to identify the areas of success and reasons for success in various port categories, as well as to track changes in efficiency over time. These shifts are frequently linked to the increased value achieved by moving from entirely state-owned public entities to private/public partnerships.

3.2 STATEWISE STUDY ON INDIAN NON-MAJOR PORTS IN INDIA

GUJARAT



Gujarat is a major coastal state with a natural coastline of around 1215 kilometers, accounting for 16 percent of India's entire coastline. Since April 1, 1982, the Gujarat marine board (GMB) has had control over the state's 48 non-major ports. 18 non-major ports handle traffic out of 48 non-major ports. The remaining 30 minor ports are mostly utilized for fishing and have very

little traffic. Gujarat benefits from a huge hinterland that stretches over northern and central India, resulting in considerable demand for the services provided by Gujarat's non-major ports. The private sector's involvement in the development of non-major ports in Gujarat has been an important influence. The overall cargo volume handled by Gujarat's non-major ports in 2020-21 was at 387.57 million tons, down from 411.47 million tons in 2019-20, showing a 5.9% decrease compared to a 3.2 percent growth in 2019-20. Gujarat's non-major ports would handle roughly 76.1 percent of all cargo handled by non-major ports in India in 2020-21. In 2020-21, overseas traffic was 348.06 million tonnes, with coastal transportation accounting for 39.51 million tonnes.

In 2020-21, Gujarat Adani Port Private Ltd (GAPL) handled the most cargo tonnage, accounting for 35.5 percent of all cargo handled by non-major ports in Gujarat. Container freight is the main commodity handled at GAPL port, accounting for 54.7 percent of all traffic. In 2020-21, Sika Port handled 121.42 million tonnes of cargo, compared to 134.14 million tonnes in the previous year. Since the inauguration of the Gujarat Adani Port Ltd facility, this port has seen a surge in cargo traffic, accounting for 31.3 percent of total cargo handled by non-major ports in Gujarat in 2020-21. Containers, coal, and POL & its products are the main commodities handled at GAPL port. In 2020-21, Dahej port handled 29.52 million tonnes (7.6% of total cargo volume). The port's main commodities are coal and iron ore. In 2020-21, Magdalla Port handled 28.7 million tonnes of cargo, accounting for 7.4% of total traffic. The port's main commodities are petroleum oil lubricants (POL) and their products. Bedi and GAPL were the key ports that had an increase in cargo handled in 2020-21, whereas Sikka, Magdalla, Jafarabad, Bedi, Mul-Dwarka, GAPL, Dahej, and Pipavav ports saw a reduction in freight traffic.

ANDHRA PRADESH

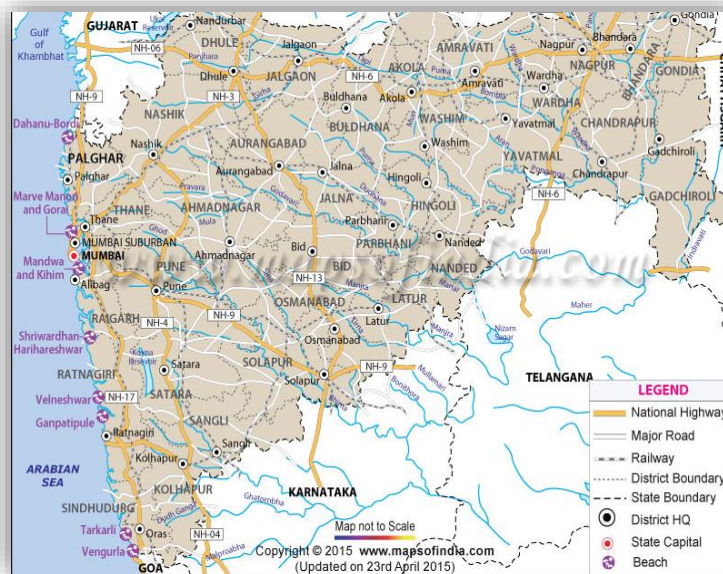


With a shore line of roughly 975 kilometers, Andhra Pradesh is another prominent marine state. Rawa, Kakinada Anchorage, Kakinada Deep Water Port, Gangavaram, and Krishnapatnam are the five non-major ports in Andhra Pradesh that typically handle cargo traffic. During 2020-21, the state's proportion of total traffic handled by all non-major ports in the country was 15.5 percent. Non-major ports in Andhra Pradesh handled 89.64 million tonnes of cargo in 2020-21, down from 99.90 million tonnes in 2019-20, indicating a 10.3 percent decrease in trade.

In Andhra Pradesh's non-major ports, foreign traffic accounted for 77.64 million tonnes (86.6 percent) of total cargo traffic in 2020-21, while coastal traffic accounted for 12.0 million tonnes (13.4 percent). Until 2015-16, traffic in the Coal showed an upward trend. However, it fell from 46.20 million tonnes to 39.52 million tonnes in 2016-17. In Andhra Pradesh, non-major ports handled 46.54 million tonnes of coal in 2020-21, compared to 55.03 million tonnes in 2019-20. Because of the restriction on iron ore mining in Andhra

Pradesh, the trend for iron ore has significantly reversed in 2010-11. Iron ore, on the other hand, increased from 2.98 million tonnes in 2016-17 to 8.13 million tonnes in 2018-19, before declining to 5.42 million tonnes in 2019-20. In Andhra Pradesh, iron ore handled at non-major ports grew to 7.66 million tonnes in 2020-21.

MAHARASHTRA



Maharashtra has a 653-kilometer coastline with 48 designated minor ports. During 2020-21, only 16 of these ports handled cargo traffic. The overall cargo traffic handled by Maharashtra's non-major ports was 39.84 million tonnes in 2020-21, compared to 43.66 million tons in 2019-20. This is an 8.7% decrease. The total cargo handled by Maharashtra's Non-Major ports was 39.84 million tonnes, with foreign freight accounting for 21.02 million tonnes (52.8%) and coastal cargo accounting for 18.84 million tonnes (47.2%). From 23.35 million tonnes in 2019-20, overseas traffic fell by 9.9% to 21.02 million tons in 2020-21. Coastal traffic is down 7.2% to 18.84 million tonnes in 2019-20, down from 20.31 million tonnes the previous year. Dharamtar is

Maharashtra's most important non-major port, with 16.64 million tonnes of cargo handled, accounting for 41.8 percent of all non-major port trade. Coal traffic accounted for 18.99 million tonnes (47.7%) of total cargo handled by Maharashtra's non-major ports in 2020-21, followed by Iron ore (23.94 percent).

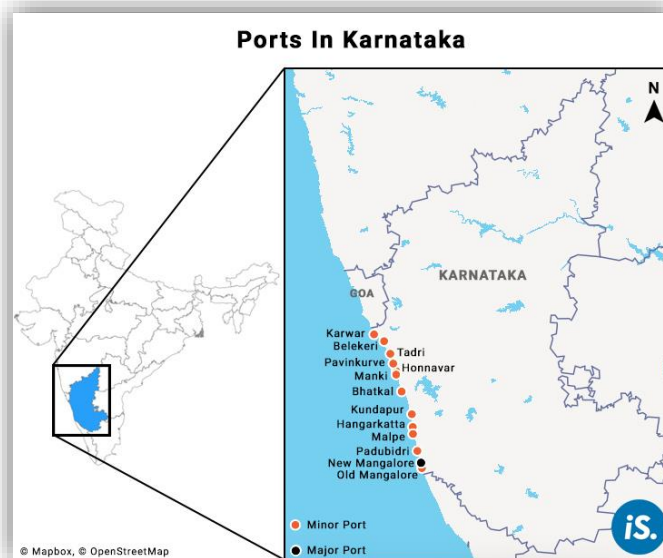
GOA



Goa is a small state on India's west coast. The state is bordered on the west by the Arabian Sea, north by Maharashtra, and south and east by Karnataka. For its natural environment, distinctive beaches, and cultural variety, it has long been considered a tourist paradise. Goa's social, physical, and industrial infrastructure, as well as its virtual connectedness, are all well-developed. It boasts an international airport that reflects its status as a world-renowned leisure destination. It has a substantial port infrastructure as well. The pharmaceutical sector has a long history in the state, and knowledge-based businesses like biotechnology and information technology are gaining

traction. Goa's coastline is approximately 118 kilometers long. In Goa, there are five minor ports. Panaji is the only port that typically handles cargo traffic. Panaji port handled 0.04 million tonnes of cargo in 2020-21, up from 0.008 million tons the previous year. The port's main product has been iron ore, however due to a prohibition on iron ore mining, container traffic at Goa's minor port has decreased dramatically since 2011-12. The total amount of coal handled fell from 0.41 million tonnes in 2014-15 to nil in 2020-21.

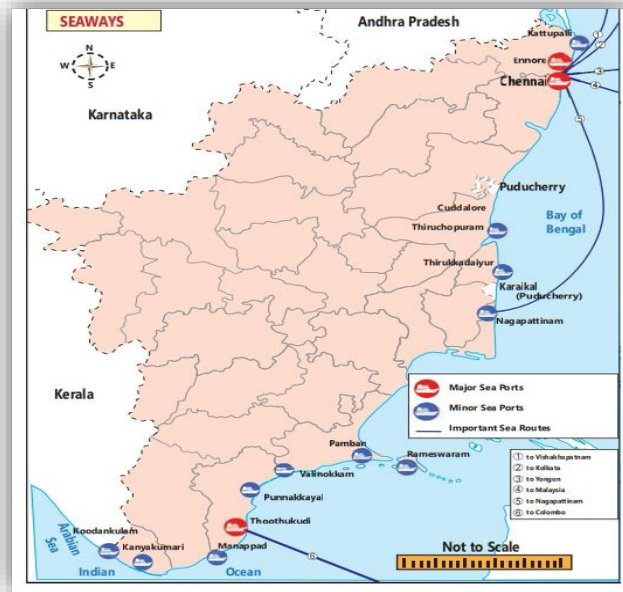
KARNATAKA



Karnataka has a 280-kilometer coast line studded with some ports like Karwar, Malpe Harbour, Tadri, Old Mangalore, and other non-major ports are now controlled by the Public Works Department under the Director of Ports and Inland Water Transport. Karnataka also contains various inland waterways on both west and east flowing rivers that have the potential to evolve into an environmentally beneficial means of freight and passenger transit, particularly for several interior sites. Because port development is a state responsibility, the Karnataka government established the Department of Ports and Inland Water Transport in 1957. Between Mangalore in the south and Karwar in the

north, the Department operates one major and ten smaller ports. The New Mangalore Port is the only significant port. Karwar, Old Mangalore, Beaker, Tadadi, Honnavar, Bhatkal, Kundapur, Hangarakatta, Malpe, and Padubidri are the smaller ports. He soles all-weather port is at Karwar, while the others are riverine fair-weather lighterage ports. non-major ports in the state handled 0.79 million tonnes of cargo traffic, down from 0.94 million tonnes in 2019-20, a reduction of 16.0% from the previous year. In 2020-21, the Karwar Port contributed 0.75 million tonnes of cargo, accounting for 95.5 percent of total cargo handled by non-major ports in Karnataka.

TAMIL NADU

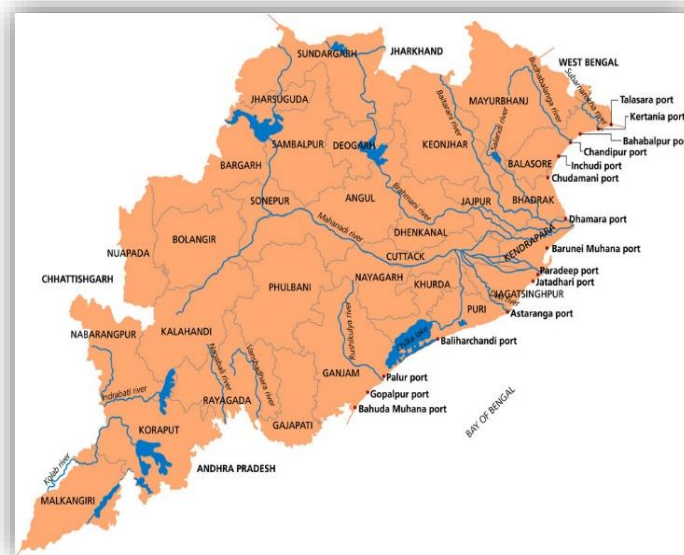


Tamil Nadu is surrounded to the south by the Indian union territory of Puducherry, the Indian states of Kerala, Karnataka, and Andhra Pradesh, as well as an international sea boundary with Sri Lanka. The state is bordered on the west by the Western Ghats, on the north by the Eastern Ghats, on the east by the Bay of Bengal, on the south by the Gulf of Mannar and Palk Strait, and on

the south by the Indian Ocean. The coastline of Tamil Nadu is 906 kilometers long. Only 6 of the state's 15 minor ports handled cargo traffic. On-major ports in Tamil Nadu handled 7.41 million tonnes of cargo in 2020-21, down from 11.37 million tonnes the year before.

During 2020-21, Kattupalli port handled the most traffic (7.05 million tonnes), accounting for 95.1 percent of total traffic handled by all non-major ports in the state, followed by Cuddalore port (0.26 million tonnes), accounting for 3.6 percent, and Other Ports (0.10 million tonnes), accounting for 2.3 percent. The commodity breakdown of traffic handled at Tamil Nadu's non-major ports shows that Other Commodities account for 90.1 percent of all cargo handled, followed by POL & Products (0.53 million tonnes) with a share of (7.1 percent).

ODISHA



Odisha has a 480-kilometer (301-mile) coastline along the Bay of Bengal. The state of Orissa is located on India's east coast. It covers almost 4.74 percent of India's land area and has a population of 36.7 million people (2001 census), or

roughly 3.57 percent of India's total population. So Odisha's coastline stretches over 480 kilometers from Ganjam District in Andhra Pradesh to Balasore District in West Bengal. It has favorable, unique, natural, and strategic port positions. Odisha's government has identified 14 possible sites for Minor Port construction. The Government of Orissa created the Port Policy in 2004 to assist developers in the development of Minor Ports. The availability of a vast hinterland generating cargo, which includes other developing Eastern and Central Indian States, as well as a mineral-rich hinterland that offers long-term potential for cargo that requires a seaport facility in Orissa, are all advantages for the development of sea ports in Odisha. Only two of the 14 non-major ports in the state handled cargo traffic. On-major ports in Odisha handled 43.03 million tonnes of cargo traffic in 2020-21, up 22.01 percent from 35.27 million tonnes the previous year. The commodity breakdown of traffic handled at Odisha's non-major ports shows that coal (17.39 million tonnes) accounts for 40.4 percent of all cargo handled, followed by iron ore (13.40 million tonnes) accounting for 31.1 percent.

CHAPTER 4

ANALYSIS AND INTERPRETATION

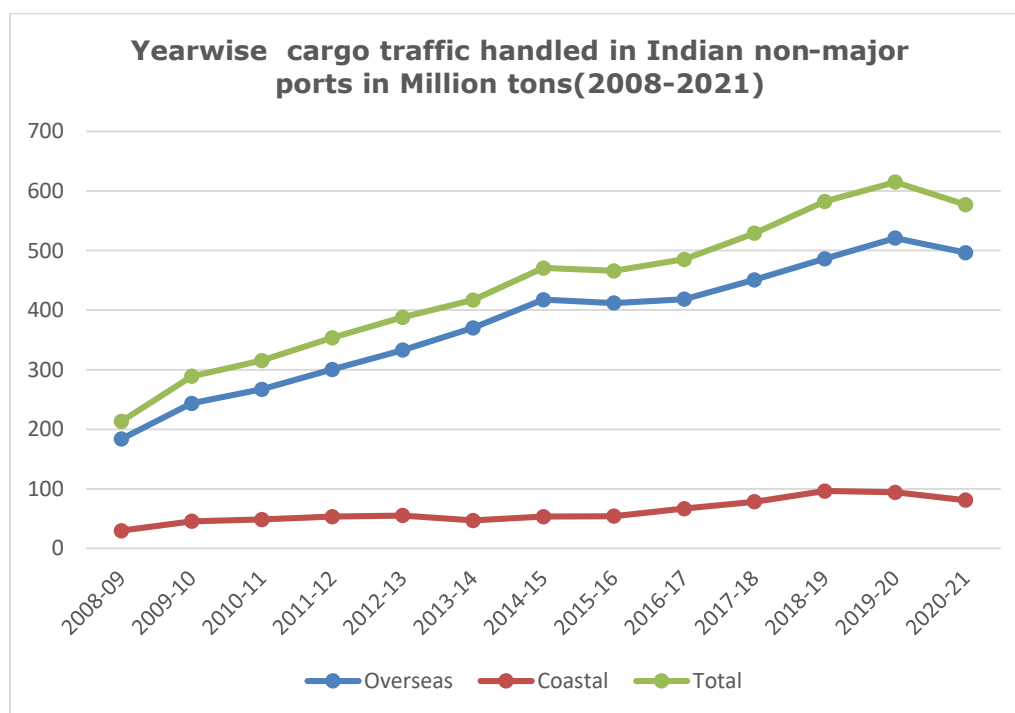
4.1 Analysis and Interpretation

The overall study covers the year wise and state wise analysis of cargo handled in Non-major ports of India. The study comprises of data from 2008-2021 which is totally relied upon the Basic port statistics, published by Transport Research wing of Ministry of ports, shipping and Waterways. In the recent past, India's economy has had a modest downward economic growth, with Gross Value Added (GVA) at Basic Price declining by 4.8 percent percent in FY 2020-21, compared to 3.8 percent percent in FY 2019-20. In India, total freight handled grew at a negative rate of 5.3 percent in 2020-21, down from 3.0 percent in 2019-20. The cargo handled at non-major ports increased at a negative rate from 5.6 percent in 2019-20 to 6.1 percent in 2020-21, to evaluate this above mentioned values, This project includes a compounded annual growth rate (CAGR) examination of Non-major ports and a forecasted trend analysis of Goods handled in Non-Major ports of India between 2008-2021.

Table 1: Year wise cargo traffic handled in Indian non-major ports in Million tons (2008-2021)

Year	Overseas	Coastal	Total
2008-09	183.54	29.68	213.22
2009-10	243.51	45.43	288.94
2010-11	267.12	48.24	315.36
2011-12	300.55	53.19	353.74
2012-13	332.93	54.99	387.92
2013-14	370.27	46.7	416.97
2014-15	417.7	53.19	470.89
2015-16	411.84	54.04	465.88
2016-17	418.5	66.72	485.21
2017-18	450.81	78.28	529.09
2018-19	486.29	96.32	582.61
2019-20	521.08	93.97	615.05
2020-21	496.55	80.76	577.3

source: Basic port statistics of India, ministry of port and shipping and waterways transport research wing



The above illustrated tabular column talks about the year wise cargo handled at Non-major ports of India, by examining the graph we can interpret that there was a gradual growth in Cargo handling from 2008-2019 and also we can see the same gradual growth of cargo handling in overseas and coastal cargo movement from India in the same period of year. The pandemic affected the global economy in 2020, reducing production and consumption and affecting supply, demand, and logistics. International marine commerce growth was already sluggish in 2019, at 0.5%, but it fell by 3.8 percent in 2020. To justify this statement, we can see a steep downfall in cargo handling in 2020-2021 in the above mention table and graph.

Table 2: Cargo traffic handled at non-major ports by states in 000' tons from 2008-2015

States	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Gujarat	152811	205583	230907	259050	287817	309945	336095
MH	10416	12046	14875	19947	24198	24664	27295
Goa	11901	13897	14581	14470	3389	284	760
KA	4968	8547	3095	592	610	509	651
Kerala	131	119	124	104	96	90	159
TN	898	1174	1611	1210	933	866	825
PDY	47	1316	4728	6421	6909	6281	4958
AP	29720	43690	43267	45633	51811	58692	83418
Orissa	295	465	465	5084	11068	14371	15452
Sea-island	2035	2100	1705	1234	1092	1268	1275
All India	213222	288937	315358	353745	387923	416970	470888

source: Basic port statistics of India, ministry of port and shipping and waterways transport research wing

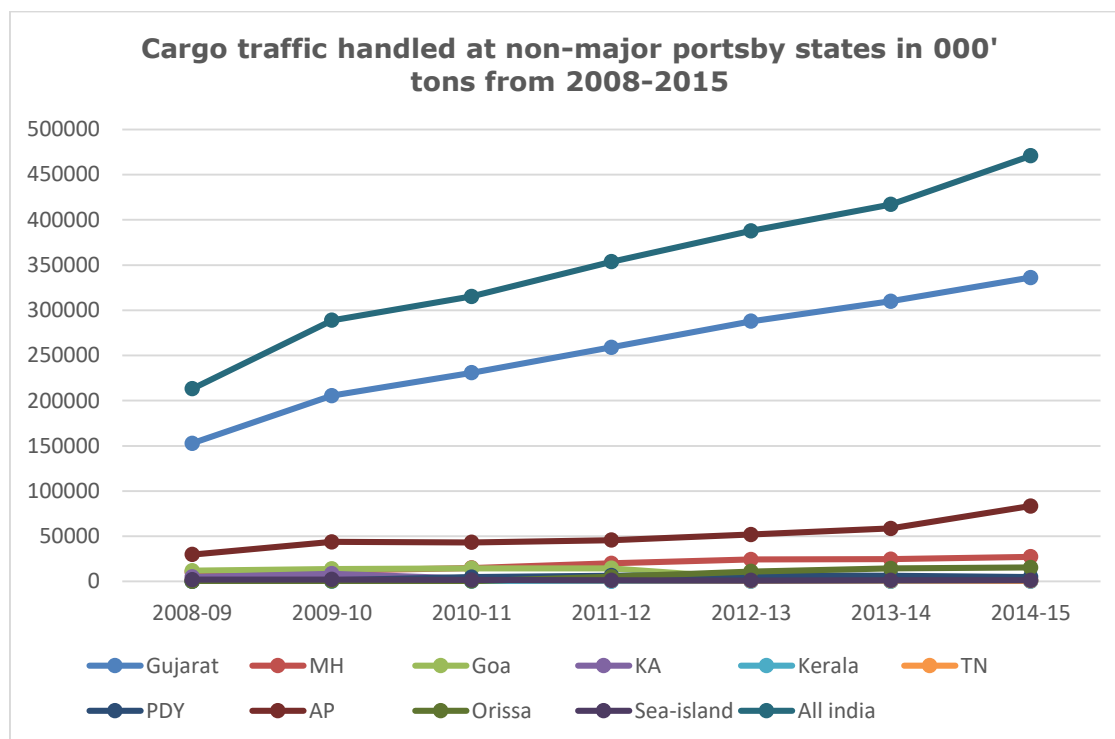
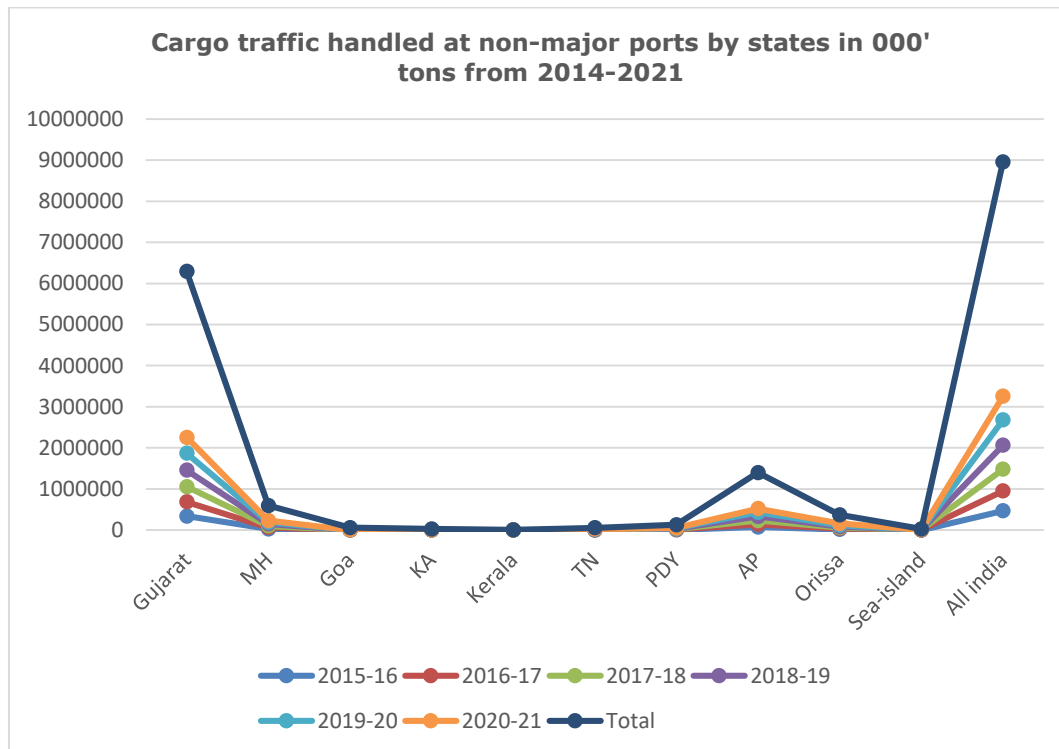


Table 3: Cargo traffic handled at non-major ports by states in 000' tons from 2014-2021

States	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total
Gujarat	339778	345739	370769	399197	411791	387572	4037054
MH	28849	34894	37906	45786	43661	39844	364381
Goa	430	117	71	15	8	35	59958
KA	835	707	680	1044	935	785	23958
Kerala	144	141	138	222	156	113	1737
TN	856	1152	1103	960	11370	7407	30365
PDY	5974	9112	8121	8370	10101	7330	79668
AP	72733	69603	86285	103334	99905	89637	877728
Orissa	14949	22473	22595	22186	35269	43033	207705
Sea-island	1323	1276	1418	1495	1851	1548	19620
All India	465871	485214	529089	582606	615046	577303	5702172

source: Basic port statistics of India, ministry of port and shipping and waterways transport research wing



Recognizing the significance of non-major ports, maritime nations have initiated programs to develop them with private sector engagement. In recent years, this has resulted in a large increase in cargo traffic handled by non-major ports. Here table2 consist of year wise cargo handling from various states of India from the year of 2008-14, then the all-around India value is also projected in the table1.the next table3 deals with the graphical representation of the values illustrated in table3. the table comprises of values from the year of 20114-21 and next is the graph consisting of that value. Gujarat is the most important marine state, accounting for about 67.1 percent of all non-major port freight volume in 2020-21. Andhra Pradesh (15.5 percent), Odisha (7.5 percent), and Maharashtra were the other main contributors to cargo traffic at non-major ports in 2020-21. (6.9 percent). Tamil Nadu and Karnataka each contributed 1.3 percent and 0.1 percent, respectively. All other Maritime States/UTs handled the remaining 1.6 percent of the cargo.

Table 4: Compounded Annual Growth Rate (CAGR) of cargo handled in 000' tonnes at non-major ports in the West coast region (2008-2021)

States	Gujarat	MH	Goa	KA	Kerala
2008-09	152811	10416	11901	4968	131
2009-10	205583	12046	13897	8547	119
2010-11	230907	14875	14581	3095	124
2011-12	259050	19947	14470	592	104
2012-13	287817	24198	3389	610	96
2013-14	309945	24664	284	509	90
2014-15	336095	27295	760	651	159
2015-16	339778	28849	430	835	144
2016-17	345739	34894	117	707	141
2017-18	370769	37906	71	680	138
2018-19	399197	45786	15	1044	222
2019-20	411791	43661	8	935	156
2020-21	387572	39844	35	785	113
CAGR	7%	11%	-36%	-13%	-1%

source: Basic port statistics of India, ministry of port and shipping and waterways transport research wing

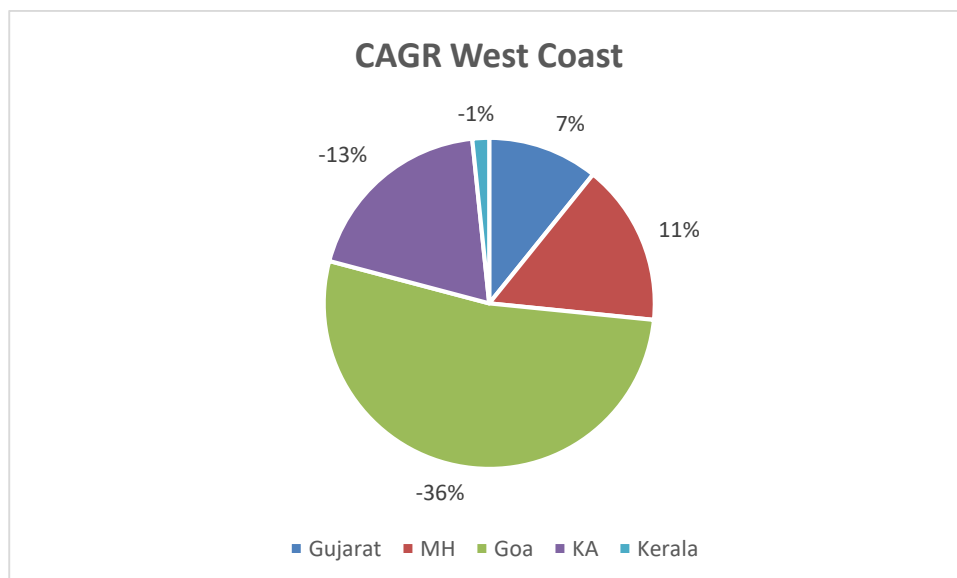
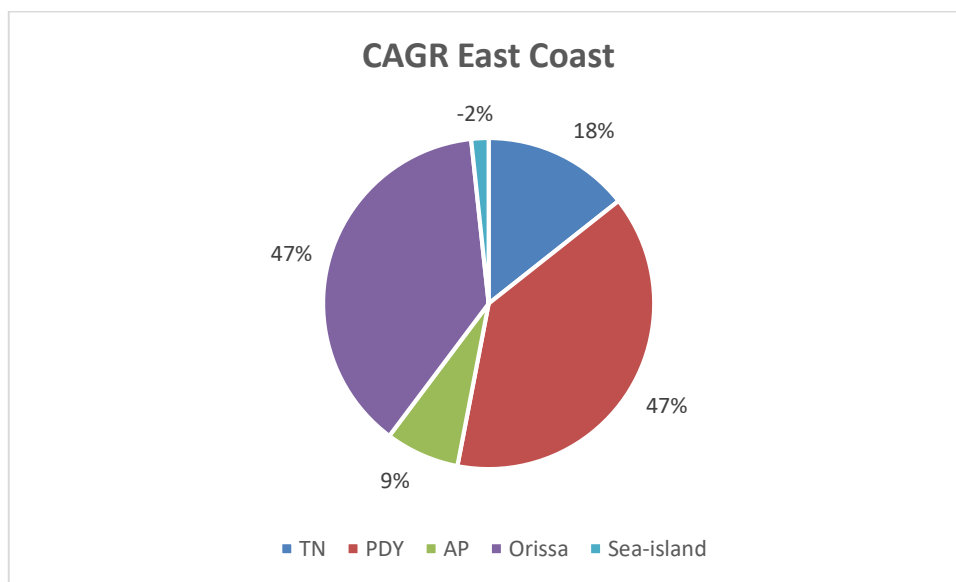


Table 5: Compounded Annual Growth Rate CAGR of cargo handled in 000' tonnes at non-major ports in the East coast and sea-island (2008-2021)

States	TN	PDY	AP	Orissa	Sea-island
2008-09	898	47	29720	295	2035
2009-10	1174	1316	43690	465	2100
2010-11	1611	4728	43267	465	1705
2011-12	1210	6421	45633	5084	1234
2012-13	933	6909	51811	11068	1092
2013-14	866	6281	58692	14371	1268
2014-15	825	4958	83418	15452	1275
2015-16	856	5974	72733	14949	1323
2016-17	1152	9112	69603	22473	1276
2017-18	1103	8121	86285	22595	1418
2018-19	960	8370	103334	22186	1495
2019-20	11370	10101	99905	35269	1851
2020-21	7407	7330	89637	43033	1548
CAGR	18%	47%	9%	47%	-2%

source: Basic port statistics of India, ministry of port and shipping and waterways transport research wing



The compounded annual growth rate(CAGR) of state wise cargo traffic is projected in the above mentioned tables and pie chart. Table4 represents the CAGR of West coast region of India Here you can see three states showing negative growth in cargo handling from 2008-2021 and Gujarat and Maharashtra is showing a positive growth rate of 7% and 11%. The Table5 talks about the compounded annual growth rate(CAGR) of the east coast region. Here you can see a Negative growth of 2% in Sea-Islands (Andaman Nicobar and Lakshadweep) and Orissa and Pondicherry is showing a positive growth of 47%, then by these years Tamilnadu and AndhraPradesh is also having a positive growth rate of 18% and 9%.

Table 6: A comparative trend analysis of Non-major ports state wise for west coast region in 000' tonnes

States	Gujarat	MH	Goa	KA	Kerala
2008-09	152811	10416	11901	4968	131
2009-10	205583	12046	13897	8547	119
2010-11	230907	14875	14581	3095	124
2011-12	259050	19947	14470	592	104
2012-13	287817	24198	3389	610	96
2013-14	309945	24664	284	509	90
2014-15	336095	27295	760	651	159
2015-16	339778	28849	430	835	144
2016-17	345739	34894	117	707	141
2017-18	370769	37906	71	680	138
2018-19	399197	45786	15	1044	222
2019-20	411791	43661	8	935	156
2020-21	387572	39844	35	785	113
2021-22	448758	48711.65	-4945.54	-871.615	161.1154
2022-23	468503.1	51666.27	-6310.92	-1259.41	165.044
2023-24	488248.1	54620.9	-7676.31	-1647.2	168.9725
2024-25	507993.2	57575.52	-9041.69	-2034.99	172.9011

source: Basic port statistics of India, ministry of port and shipping and waterways transport research wing

The above illustrated table6 mentions the Trend analysis of Non-major ports state wise for West coast region of India. This is the forecasted trend of cargo handling for four years and which is totally depended on the projected values of cargo traffic from 2008-2021.By examining the trend from the table we can estimate that Goa and Karnataka is showing a negative trend in forecasted values. If we analysis the trend of cargo traffic from 2008 for goa and Karnataka, we can see a downfall in cargo handling from 2011 till now which made the forecasted value negative. Here Gujarat is handling the major portion of cargo from the west coast region.

Table 7: A comparative trend analysis of Non-major ports state wise for East coast and sea islands in 000'tonnes

States	TN	PDY	AP	Orissa	Sea-island
2008-09	898	47	29720	295	2035
2009-10	1174	1316	43690	465	2100
2010-11	1611	4728	43267	465	1705
2011-12	1210	6421	45633	5084	1234
2012-13	933	6909	51811	11068	1092
2013-14	866	6281	58692	14371	1268
2014-15	825	4958	83418	15452	1275
2015-16	856	5974	72733	14949	1323
2016-17	1152	9112	69603	22473	1276
2017-18	1103	8121	86285	22595	1418
2018-19	960	8370	103334	22186	1495
2019-20	11370	10101	99905	35269	1851
2020-21	7407	7330	89637	43033	1548
2021-22	5703	10412.54	107995.5	38794.73	1354.154
2022-23	6184	11024.57	113778	42054.36	1332
2023-24	6665	11636.6	119560.6	45313.99	1309.846
2024-25	7145	12248.64	125343.1	48573.63	1287.692

source: Basic port statistics of India, ministry of port and shipping and waterways transport research wing

The above stated table7 talks about the anticipated trend analysis of Non-major ports state wise for East coast regions and Sea Islands of India for four years. In the case of Sea Islands(Andaman Nicobar and Lakshadweep) we can see a moderate growth in cargo traffic and Pondicherry, Andhra Pradesh and Orissa is showing an increase in cargo traffic in the forecasted years this is because, when we look into the previous years of cargo handled in these states, we can see a gradual increase in cargo traffic from 2008-2021.when we take the year of 2020-2021 there is increase in cargo traffic handled in all states and Tamil Nadu is projecting a moderate growth in upcoming years.

CHAPTER – 5

CONCLUSION

5.1 FINDINGS OF THE STUDY

- In the recent past, India's economy has had a modest downward economic growth, with Gross Value Added (GVA) at Basic Price declining by 4.8 percent in FY 2020-21, compared to 3.8 percent in FY 2019-20.
- In India, total freight handled grew at a negative rate of 5.3 percent in 2020-21, down from 3.0 percent in 2019-20.
- The cargo handled at non-major ports increased at a negative rate from 5.6 percent in 2019-20 to 6.1 percent in 2020-21.
- The processing of cargo traffic at Indian ports has steadily increased during the previous decade.
- In 2020-21, Indian ports handled 1021.88 million tons of international cargo, up from 1066.24 million tons in 2019-20.
- Overseas commerce in India fell by 4.2 percent in 2020-21, compared to 4.6 percent in 2019-20.
- From 2008-09 to 2020-21, the compound annual growth in cargo handled at non-major ports was 9.9%.
- Gujarat has emerged as the most important marine state in terms of port traffic, accounting for 40.4 percent of all cargo handled at Indian ports.
- Gujarat accounts for 67.1 percent of the cargo handled by non-major ports.
- Gujarat is followed by Andhra Pradesh (12.8 percent), Maharashtra&Odisha (12.6%), and Tamil Nadu (8.7%) in terms of overall port traffic in India.

- 68 non-major ports were reported to have handled cargo traffic in 2020-21.
- In the fiscal year 2020-21, India's non-major ports handled 577.31 million tonnes of cargo, down from 615.05 million tonnes in the previous fiscal year.
- In 2020-21, international freight traffic declined by 4.7 percent, compared to 7.2 percent growth in 2019-20.
- In 2020.21, coastal freight traffic declined by 14.1 percent, compared to 2.4 percent in 2019-20.
- Andhra Pradesh (15.5%), Odisha (7.5%), and Maharashtra (7.5%). (6.9 percent).
- Tamil Nadu and Karnataka each contributed 1.3 percent and 0.1 percent, respectively.
- All other Maritime States/UTs (Union Territory) handled the remaining 1.6 percent of the cargo.
- GAPL port handled the most cargo tonnage in Gujarat in 2020-21, accounting for 35.5 percent of total cargo handled by non-major ports.
- In 2020-21, Sikka Port handled 121.42 million tonnes of cargo, compared to 134.14 million tonnes in the previous year.
- In 2020-21, this port handled 31.3 percent of the total cargo handled by Gujarat's non-major ports.
- In 2020-21, Dahej port handled 29.52 million tonnes (7.6% of total cargo volume).
- In 2020-21, Magdalla Port handled 28.7 million tonnes of cargo, accounting for 7.4% of total traffic.
- Non-major ports in Andhra Pradesh handled 89.64 million tonnes of cargo in 2020-21, down from 99.90 million tonnes in 2019-20, indicating a 10.3 percent decrease in trade.
- In Andhra Pradesh's non-major ports, foreign traffic accounted for 77.64 million tonnes (86.6 percent) of total cargo traffic in 2020-21, while

coastal traffic accounted for 12.0 million tonnes (13.4 percent).

- The overall cargo traffic handled by Maharashtra's non-major ports was 39.84 million tonnes in 2020-21, compared to 43.66 million tonnes in 2019-20.
- Overseas traffic fell 9.9% to 21.02 million tonnes in 2020-21, compared to 23.35 million tonnes in 2019-20.
- Coastal traffic is also down 7.2 percent, from 20.31 million tonnes in 2019-20 to 18.84 million tonnes.
- In Goa, there are five minor ports.
- Panaji is the only port that typically handles cargo traffic.
- Panaji port handled 0.04 million tonnes of cargo in 2020-21, up from 0.008 million tonnes the previous year.
- In 2020-21, non-major ports in Karnataka handled 0.79 million tonnes of cargo traffic, down from 0.94 million tonnes in 2019-20, a reduction of 16.0% from the previous year.
- In 2020-21, the Karwar Port contributed 0.75 million tonnes of cargo, accounting for 95.5 percent of total cargo handled by non-major ports in Karnataka.
- Only six of the 15 non-major ports in the state handled cargo traffic.
- In the fiscal year 2020-21, Tamil Nadu's non-major ports handled 7.41 million tonnes of cargo, down from 11.37 million tonnes the previous year.
- Kattupalli port handled the most traffic of 7.05 million tonnes in 2020-21, accounting for 95.1 percent of total traffic handled by all non-major ports in the state, followed by Cuddalore port (0.26 million tonnes) accounting for 3.6 percent, and Other Ports (0.10 million tonnes) accounting for 2.3 percent.
- Non-major ports in Odisha handled 43.03 million tonnes of cargo traffic in 2020-21, up 22.01 percent from 35.27 million tonnes the previous year.

5.2 SUGGESTIONS

- Large vessels cannot reach Indian ports due to draught restrictions, resulting in goods being sent from/to India via a foreign port or transshipment/trans-loading on the high seas, incurring additional costs and time. In aspect government can establish a separate regulatory authority to maintain and govern the dredging process in all ports.
- It is critical to build governance arrangements that allow both functional and financial autonomy when it comes to port governance. Port governance needed to be more prominent to handle more cargo traffic.
- To address the high turnaround time and pre-berthing detention, a comprehensive picture of port operations is required, including ship to shore and shore to hinterland.
- Domestic shipping lines have voiced a significant need for cargo assistance for Indian flagged vessels in order to stem the drop in the percentage of Indian cargo carried by these vessels.
- The following efforts might be explored in order to make coastal shipping a viable and appealing alternative to road/rail: (a) provide bunker fuel import duty exemption; (b) provide a 100 percent service tax abatement.
- Given the large finance requirements for the marine sector, there is a case to be made for a specialist maritime financing agency.
- Allow for seamless transitions between the IV (inland boats) and RSV (river sea vessels) categories on the one hand, and the RSV and MS (bigger commercial shipping vessels) categories on the other, as needed by the trade.

- Dedicated docks for coastal ships should be established.
- Improve the competitiveness of coastal ships and make cargo transportation from land to sea easier.
- Create and maintain a reliable system/database for collecting accurate, voyage-specific data about coastal shipping.
- Cabotage Policy should be more relaxed.

5.1 CONCLUSION

Shipping is a derivative demand that is heavily influenced by global economic and trade trends. As a result, negative economic and trade trends hampered the expansion of marine commerce in 2019. In 2019, global economic growth slowed, owing to ongoing trade tensions and rising policy uncertainty. The continuing trade disputes between China and the United States, as well as the overall deterioration of the economy, impacted both developed and emerging economies. As industrial activity slowed throughout the year, global goods trade declined in 2019. Rising tariffs have exacerbated policy uncertainty, stifled investment, and hampered global commerce. The pandemic affected the global economy in 2020, reducing production and consumption and affecting supply, demand, and logistics. International marine commerce growth was already sluggish in 2019, at 0.5%, but it fell by 3.8 percent in 2020. Global GDP fell by 3.5 percent in 2020, the greatest drop in 70 years. The services industry, particularly tourism, travel, and hospitality, had the largest impact. The drop in marine trade flows, on the other hand, was offset by increased demand from government stimulus packages. The total cargo handled at Indian ports (major and minor) grew to 1249.99 million tonnes in 2020-21, up from 1319.97 million tonnes in 2019-20, indicating a 5.3 percent decrease in 2020-21. Gujarat has emerged as the most important marine state in terms of port traffic, accounting for 40.4 percent of all cargo handled

at Indian ports. It's also worth noting that Gujarat accounts for 67.1 percent of non-major port freight. Gujarat is followed by Andhra Pradesh (12.8%), Maharashtra&Odisha (12.6%), and Tamil Nadu (8.7%) in terms of overall port traffic in India. Odisha is the only state with a positive growth rate of 47.01 percent from 2008-21.

5.2 DIRECTIONS FOR FUTURE RESEARCHERS

This study here is only a bit of an iceberg. It is based on the Basic port statistics published by Transport Research wing of Ministry of port, shipping and waterways, here the study can be more elaborated by using the data's of Efficiency indicators of Non-Major port like pre-berthing detention data, Average turn-around time, Average Output per ship Berth-day and the list of equipment's handled by Non-Major ports India can bring a better outcome for this study.

CHAPTER 6

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