

**A STUDY ON PORTS IN ANDHRA PRADESH AND THEIR IMPACT ON
INDIAN ECONOMY**

*A project report submitted in partial fulfilment of the requirement for the
award of the degree of*

MASTER IN BUSINESS ADMINISTRATION

in

INTERNATIONAL TRANSPORTATION AND LOGISTICS MANAGEMENT

by

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DECLARATION

I, **RACHAKONDA SOMAYAJULU (Registration No.:1903305029)** student of school of maritime management of Indian Maritime University, declare that this project titled "A STUDY IN PORTS IN ANDHRA PRADESH AND IMPACT ON THE INDIAN ECONOMY" is a bonafide record of work carried out by me under the guidance of Dr. M. SEKAR, Assistant Professor, School of maritime management submitted in partial fulfilment of the requirements for the award of the degree of Master in Business Administration in International Transportation and Logistics Management. The information submitted is true and original to the best of my knowledge.

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EXECUTIVE SUMMARY

Andhra Pradesh have a long coast line of 974 kilometers and one major port and five operational non – major ports. But these non – major ports also have a lot of potential to handle the cargo and ports like Krishnapatnam and Gangavaram are handling cargo more than some of the major ports in India.

The research deals with the study about those ports and the impact on the regional economy as well as national economy. So, as to develop the ports, the state government has developed a plan of action to create a separate maritime board for the state and develop the other selected 11 regions as green field ports. The employment created by these developed green field ports under PPP mode.

The employment generated by them as well as developing SEZs near the vicinity of them creates more employment opportunities and also the taxes filed by these can also have an indirect impact on the Indian economy.

The issues and challenges, opportunities are also discussed in the research.

CHAPTER I
INTRODUCTION

1.1 Introduction and Meaning:

Andhra Pradesh is a state in the south eastern coastal region in India. It is seventh largest state by area covering of 162, 975 m² and tenth most populous state with 50 million inhabitants. It has a coastline of 974 kilometers which is the second longest coast line after Gujarat. The coast line extends from Ichapuram in Srikakulam district to Tada in Nellore district. This long coast line consists of several ports, harbors etc., it accounts for 12% of India's trade volume with one major port and five operational non – major ports.

It is the third state in terms of cargo handled by non-major ports and third state in terms of cargo handled by major ports. It is one of the top five exporting states of India. The exports include rice, wheat, maize, soyabean, bentonite, tobacco, sand, sea food, cement clinker, minerals etc.,

The main imports are potash, urea, crude palm oil, gases, wood pulp, chemicals, edible oils etc.,

The state is leading in Indian states among production and export of marine products, agriculture and textiles. The state has numerous special economic zones specializing in a wide range of commodities including textiles, pharmaceuticals, food processing and IT. The state has started a growth and development strategy with emphasis on globally competitive exports. This led to overall strategy of coast led industrial development by utilizing the long coastline. There are certain measures taken for increasing the trade in the state which include, upgrading trade infrastructure and encouraging exports through focused measures. This requires huge connectivity in hinterland and connecting geographical enclaves only dedicated to exports which increases port connectivity and also to establish institutions for certifying standards for exports.

Export Potential:

While the exports from Andhra Pradesh are radically increasing in the recent past, in order to maintain this trend, it might be essential to identify key products and markets that provide opportunities for companies to grow and achieve economies of scale which in turn increases their efficiency levels. The state has a comparative advantage over several products which can be used for boosting exports. The state can explore the major markets of USA, Germany, China, UK and France.

Vegetable products account for 8.4% of Indian exports from Andhra Pradesh. The destinations are Vietnam, Sri Lanka, USA and Senegal.

The state also accounts for 12.9% of India's exports in construction material and the destinations are USA, Saudi Arabia, UAE, UK.

The state also tried to penetrate into the market of pharmaceuticals but the success is limited. The major markets are Belgium, UK and Japan.

Vehicles and aircrafts and associated transport equipment from the state are largely sent to Malaysia, Sri Lanka and Singapore.

1.2 HISTORY OF MARITIME TRADE IN ANDHRA PRADESH:

Early trade in Andhra is dated back to the Satavahana empire (2nd century BCE). The powerful focus is on the maritime trades especially with Romans. Andhra's early exports to Rome were Muslins, grain, salt, spices, pepper, bangles, cooking vessels, coarse cloth. In return to that Italian wine, metals such as copper, tin and lead, coral and topaz were imported.

This strong connection was again discovered centuries later when Niccolò de' Conti while visiting Vijayanagara empire in 1420 coined the phrase "Italian of the east" for the Telugu language. He found similar to Italian as the language is ending with vowels.

The coins revealed from the Satakarni period were made like ship mast to unravel the maritime trade during that period.

Because of trade between Andhra and Romans, Andhra was beneficiary compared with Rome. This resulted in an expansion of “agro cities” and sea ports. Also, compared to coastal Odisha, the Godavari – Krishna deltaic zone and adjacent areas have produced rich material for trade activity.

Andhra Pradesh being the central portion of the east coast, had its glorious maritime tradition from the ports of Machilipatnam, Visakhapatnam, Yanam, Kakinada, Coringa, Krishnapatnam, Bhavanapadu, Gangavaram.

1.3 OBJECTIVES OF STUDY:

The main objectives of the study are:

1. To study about ports in Andhra Pradesh.
2. To Study the impact the states and national economy.
3. To Suggest findings from the above study

1.4 SCOPE OF THE STUDY:

This study mainly deals with the ports in Andhra Pradesh and their impact on the state economy and also the country’s economy.

1.5 RESEARCH METHODOLOGY:

It is basically the approach chosen that describes the techniques, procedures or processes utilized into the study in qualitative or quantitative basis. For the study, quantitative data was required for the analysis.

This study is incorporated by extensive secondary research compiled from different sources. Secondary research is administered to improve the data that is already available. In this report we will be knowing about the main

role of AP ports and impact on Indian economy also investments made in for improvement for future development.

We have to analyze the ports performance in the state and the employment generated by them.

After reading the project one can answer the following questions:

1. How much cargo handled and CAGR in ports?
2. How much employment is generated in the ports?

1.6 LIMITATIONS OF THE STUDY:

1. All the data used is secondary. We are not sure how accurate it is.
2. The operational profit and taxes paid by non – major ports in the state are not available. This makes the study a bit lagging.

1.7 CHAPTER SCHEME:

The first chapter deals with the introduction of ports in Andhra Pradesh and the history of trade. This is followed by an insight of what study is and the objective and scope of the study. Also, within which the research has been conducted and its limitations.

The second chapter deals with the understandings and findings from research and journal papers of various researchers as a part of the literature review and have been beneficial to the area of the study, the areas that research so far has addressed, the gap between the research done so far and what has to be achieved.

The third chapter consists of the following information regarding the various components such as the industry profile like where the ports are located and the Andhra Pradesh Maritime board

The fourth chapter contains interpretation of the research, the data collected, the methodology and results obtained by the detailed analysis of the same.

The fifth chapter contains findings, suggestions and directions for the future research and how further the research can be done as a matter of concern.

CHAPTER 2
LITERATURE REVIEW

2.1 Review of the literature

The following are the review of activities on different topics by various authors, various papers and various conclusions and recommendations in the study of development of economies by development of sea ports.

a. The impact of India's economy on the development of seaports: (Leszek Mindur, 2019)

India's distinct economy includes traditional and modern agriculture, crafts, modern industries and a variety of services. In 2017, almost 49% of India's GDP is generated by service sector, where as the industrial sector accounted for 27%, agriculture 16%. India is second in terms of population after China. To meet the demand from the population, every year, more than 10 million jobs should be created. However, India did not present the unemployment figures till some time. But after 2012 it came to know that the unemployment rate was 2.7% of that population. In 2018 the country lost 11 million jobs as the rapid economic growth generates much fewer jobs than in the past. But, after the Make in India scheme in 2014, which intended India to transform into a global manufacturing hub, it created new jobs and enhanced professional qualifications of the population.

It also led to make Foreign Direct Investment in major industries and also domestic businesses and enhanced productivity among businesses.

Reforms introduced by the Indian government contributed to enhanced productivity among domestic businesses and attract more foreign direct investment. Due to its geographical location, India has been using sea transport to promote its international trade. However, with too few deep – sea ports and limited cargo handling capacity, its seaports can handle only some of the largest intercontinental ships. This paper expected to solve problems associated with performance of Indian ports and strengthen the Indian maritime sector to meet the ever-growing demand for goods transported by sea.

b. Review on the role of ports in the development of a nation:

(2015, GS Dwarakish, Akhil Muhammad salim)

The transportation sector is a strong factor in terms of economic and regional balanced development, as well as also having a great influence on national integration to the world economic market. There are certain ways to measure economic impacts like quantity of jobs generated, sales, tax returns etc., associated with an activity. The paper verified with a regression analysis that the total exports and imports shipped have a direct correlation with the gross domestic product of the nation. On the other hand, the number of workers, port size, stocking capacity have showed no relation with the gross national income.

The growth of ports led to greater trade activity, increased supply, greater foreign reserves and reduced commodity prices etc., Due to globalization, the businesses look to expand their business at an international level. This effects the GDP of the country as the companies have ability to export goods and services globally.

The higher the throughput of goods year – on – year, the more infrastructure, provisions and associated are required. Ports are also important for the support of economic activities in the hinterland since they act as a crucial connection between sea and land transport. As a supplier of jobs, ports do not only serve an economic but also a social function. Industries require a safe and cheap means of exporting finished goods and importing raw materials. Hence the majority of industries are located in the vicinity of ports. These industries in turn, influence the lives of employees and indirect benefactors.

c. The impacts of port infrastructure and logistics on economic growth: (ziaul Haque munim, hans joachin schramm)

This study considered 91 countries with sea ports and conducted a factual inquiry into the broader economic contribution of seaborne trade, from a port infrastructure quality and logistics performance perspective. Better Quality of port infrastructure shown that it improved the logistics performance of the nation which included technology advancements, greater reliability, less damage, ability to track shipments, and timelessness of delivery etc.,

The benefits from the trade can be characterised by the total international trade and improved labour supply, expanded production and diffusion of innovation, competitive pressures and economic restructuring etc.,

It also stated that investment into transport facilities improves logistics ability and reduces freight costs. This shows a positive effect on national economy.

Investment in quality improvement of port infrastructure and its contribution to the economy are often questioned. This paper incorporates the data regarding the developed and developing economies and shows that it is vital for developing countries to continuously improve the quality of port infrastructure as it contributes to better logistics performance leading to higher sea borne trade, yielding higher economic growth. However, this associations grow weaker as developing countries become richer.

However, the reasons for any lacking of significant association between maritime trade could be: 1. The GDP growth rate per capita compared to sea borne trade of the developed countries is lower than developing economies and 2. The developed countries are service based economies and the trade is often one way while the developing countries are two wa

d. Contribution of ports to local economies in Korea (Bong-min Jung)

Ports are considered as a gateway to international trade but they are considered as major contributors of development but change in economic structure led to change in the trend. Ports played an important role in developing heavy industries such as steel, petroleum as they are having products in bulk and looking for viable low-cost transportation. The role of ports in local and regional level is increased by the transportation technology advancement, which is facilitating international trade. This advancement in technology in transportation resulted in interdependency among the countries in the world and increased international trade.

Formerly the role of ports was only to store the cargo, shift it to CFS and distributing etc., Now there are several value addition services are being done in ports like labelling, customizing, managing information flows and final assembly etc.,

There are certain factors that restrict the port – city relationship. They are change in transportation technology which is ships are getting bigger and bigger and containerisation of cargo etc., The contribution to the regional economies by the ports become weakened as the industries become more and more capital intensive.

This led to development of ports which in turn developed the industries around them. They always assumed as gateways to import raw materials and export for manufactured goods. Hence, areas like Busan and Incheon are developed when major industrial activity happened in the early 80s. Ports need to take major steps like providing direct economic leadership rather than simply act as supporter for regional development.

The regional domestic product of Busan remained below national average in late 80's despite the improvement of logistics infrastructure.

e. Cost benefits for national and local by impact of ports:

(Hercules E Harlambides, Marco Benacchio. Enrico L musso)

This research aims at analysing the impact of ports on local economies and the territorial distribution from the environment towards a borderless economy and considering the impact as a source of the inputs pay back.

Besides the changing of benefits and costs related to port the congestion levels grow higher and a loss of large amount of loss of public money.

These causes the port and local economy relations weaker. The traffic flows increase, port operations decrease and become lesser importance and require lesser man power. The real risk is that more commodities pass through ports without adding value like employment and economic activities.

This means that the economic impact of the ports tends to spread more over the entire area while space consumption and negative externalities increase and this situation brings more major socioeconomic benefits.

While considering the ports as catalysts for regional development became an outdated concept, the global perspective where impact is a significant one. The value-added services also promote ports rather than just a transit node for distributing node and passengers towards hinterland locations.

This paper aims at cost benefits for local and national economies as how ports impact them and how they move from a localized environment to a much broader international one including users from an international level. These ports generate tax flows and duties, BOP and BOT. The wider effects of them are they act as proliferation for the industries. They also act as economic tools for territorial policies aiming at developing backward areas and provide access to international markets and enabling a larger FDIs.

f. Port led development in developing countries for effective maritime transportation: (Rakibul Hassan, Kazi Mohiuddin)

Port led development is the main face of the regions in India, Myanmar, Malaysia etc., The region consists of most marine resources and all have one of the longest coast lines in the world. Bangladesh's profession and maritime profession is lagged by the port congestion, blockages and difficult inland transport and inadequate infrastructure and handling equipment and administration like document delays and lack of skilful port labour.

It is a thought that the establishment and usage of framework in international logistics as well as supply chain programs in the tertiary education will address the above defined problems.

Underutilized ports are the main barriers for increased logistics cost which is reducing the competitiveness compared to the other countries which have a low cost. Some of the barriers are hinterland connection, framework growth, industrialization etc.,

While maintaining national infrastructure upgrade and giving more importance to transport frameworks, a logistics approach including trade enabling policies, process and treatment will remedy the scenario, as they will make the country more competitive for trade. Supply chain prerequisite should be included in the curriculum to meet the demand of scarcity of skilled employees.

There are several stages for development of a port. It is given according to Sagarmala project. They are:

1. Infrastructure development
2. Hinterland connectivity
3. Port industrial development
4. Community development
5. Sustainable port led developmen

g. Economic and container port development in

India(Jonardan Koner, Avinash Purandare, Mangesh Madurwar)

The sea ports have a huge importance in the globalisation era as the world trade is extended as numerous products came into existence. The exports regarding India have reached at about 25% of its GDP and it is increasing year – on – year. it is expected to reach about 500 billion USD by 2020. The values taken are only for the major ports of India. The annual cargo growth is related to the Agricultural GDP, Industrial GDP growth and service sector GDP growth. The value of R square revealed that the economic growth is 49% dependant on the above three independent variables.

The explanatory variable service GDP growth coefficient alone is very significant because its t-statistic is very high and the corresponding p-value is very small. The sign of the coefficient is positive, indicating the support and constructive effect of the growth of GDP in the service industry on the growth of the freight volume handled by each selected port in thousands of metric tons are also positive, but they are significant at the 5% level. The value of R squared is 0.49, which means that the explanatory variable's explanation rate for the dependent variable is about 49%.

This analysis is done based on multiple regression technique to measure the impact of economic growth and development in India. This study suggested that there is a relation between cargo traffic handled and the variables considered such as Agricultural GDP, industrial GDP etc., have increased over time.

Therefore, exports and imports have played a crucial role for the development of Indian economy. The rapid economic development of India requires a well - functioning seaport system. India is having 7, 517 kilometers of coastline located on the East-West Trade Route. This links India to Europe and the countries of Far East.

h. Logistics and economic growth, a panel data approach:

(Zhangofang Chu)

The logistics are the important driving forces of economic growth. This study investigates the long-term relationship between logistics investment and economic growth in China. It also considers the high inequalities of development in some regions in China. It compares the coastal provinces and internal provinces economic growth. The paper also reveals the contributive role of logistics investment is greater in underdeveloped internal provinces than for coastal provinces.

The data is considered from 1998 to 2007 in China, because the logistics industry in China is smaller before 1997. The GDP, per capita GDP and growth rate and population and growth and fixed assets for this study and the total employment, government expenditure and education etc., are selected as conditional variables. The test indicated that the relationship between per capita GDP and logistics investment appears to be positive.

The test also interpreted that the lower levels in some provinces GDP per capita of tend to grow at a higher rate.

This paper scrutinizes the effect of logistics capital on long run regional economic growth in China. It showed that the regional growth of real GDO per capita is positive. The contribution of logistics capital to regional economic growth is higher for developing regions rather than developed regions. These also implicate the policy making in the context of other developing economies.

Interestingly, the coefficients of fixed investment, human capital, and population growth are significant for the hinterland model while not for the coastal model, and its amplitude is high. than the inland model. This suggests that the Chinese government should improve investment in fixed capital and human resources for the inland provinces in order to boost their economic growth in order to catch up with the coastal provinces.

i. Economic impact of a port on regional economy (Gilbert yochum, vinod agarwal)

This research paper attempts to identify the several previous port impact studies in the estimation of primary port economic impact. These faults are found to create the potential for both positive and negative bias. This paper tries the technique of circumventing several practical problems in the estimation of secondary impact.

The problem of estimating the port's economic impact is further complicated by the lack of sales data from the sectors affected by the port. Most of the companies we interviewed provided information on their payroll and employment, but declined to disclose their sales due to the confidential nature of this data. Other sources, such as sales tax records, may be used to gather information on sales from a variety of industries, but this information is highly aggregated. The requirement in estimating port impacts is to collect information on the share of revenue due to port economic activity and not to aggregate revenue from different sectors.

When a I – O model is used to determine the secondary port impact, some difficulties arise because these types of models do not typically include port industry as a single element of industry mix. Given the potential difference between the average port household income and the region as a whole, the CES (consumer expenditure survey) method provides a method for distribution of I – O sector of household expenditures.

The specifications of a port industry vary from port to port, especially in larger relative to smaller facilities. This study incorporated that port required employment, income, tax revenues. It also suggested that if the research persons should include all the firms providing services to the port such that the findings will also help the economic activity attributable to the port.

j. measure between ports and regional economy by structural modelling (Ping Deng, Shiqing lu, Hanbin Xiao)

With the rapid development of the logistics industry in port cities, the role of port logistics is becoming more and more important in the regional logistics system. The objective of this study is to develop a model that assesses the impact of port supply, port demand, and value-added activity in port factors on the regional economy by using structural equation modelling approach.

This study scrutinized the relationship between ports and regional economies from a logistics perspective which provided support for policy makers for their strategic decisions. With a rapid development in logistics industry, port logistics have become an important part in regional logistics system. There is a positive relationship between port supply factor and demand factor. The study suggests that if the port authorities increase the supply of port the demand will enhance rapidly. Another study is that the transportation infrastructure can increase and create a demand for the intermediate inputs from other sectors also and there will be multiplier effect on the economy. There was no positive relationship for the port demand and regional economy. There is an indirect effect of port demand on regional economy. Which is port demand have an effect on value added activity in port and it had a significant effect on the regional economy.

A structural equation modelling approach suggested that port supply had a positive effect on demand. The other value-added activity also had a positive effect on regional economy.

2.2 Literature survey:

The research prospects under this field of study are plenty. From reviews of the journal papers, it is evident that a lot of research is been carried out for years on how the ports are developing the economy by generating employment and handling cargo. It is witnesses that in growing economies like India, these play a vital role in developing the economy. In almost all researches it is suggested that the ports have to improve their infrastructure to get more employment and the government is required to put out a framework regarding the exports to achieve the targets and to obtain the preferred GDP.

2.3 Literature Gap:

This literature consisted of how ports are used as a development indicator of regional and national economies. But there are certainly some gaps in them. The data mostly collected is secondary data and we cannot say it is absolutely true. There are some definite parts in the literature that if they should include only ports or all the firms that are users of the ports, such that the analysis can be more accurate. Due to low number of deep – sea ports and low capacity utilization some of the analysis goes wrong.

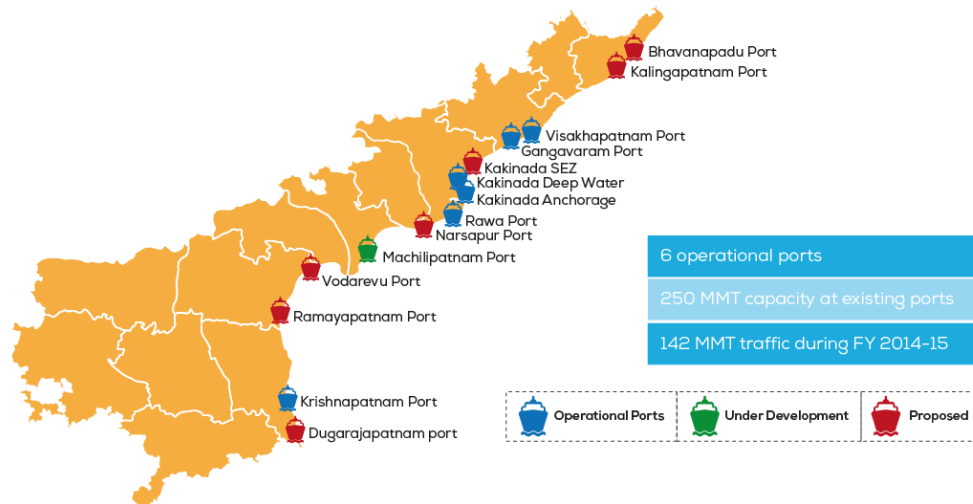
CHAPTER III
INDUSTRY PROFILE

3.1 PROFILE OF PORTS:

Andhra Pradesh consists of one major port and 14 non major ports in which only 5 ports are operational and six ports are development under PPP mode.

Name of the port	District	Type of port	status
Visakhapatnam port	Visakhapatnam	Outer harbour and inner harbour	Operational major port
Kakinada port	East Godavari	Anchorage and deep-water port	operational
Machilipatnam port	Krishna	Green field port	In operation from 1945 to 1967. Nominal operation up to 1990. Proposed for inland operation.
Krishnapatnam port	Nellore	Deep water port	Operational
Gangavaram port	Visakhapatnam	Deep water port	Operational
Rawa port	East Godavari	Anchorage port	Operational captive port
Bhavanapadu port	Srikakulam	Green field port	Fishing harbour constructed,

			no commercial harbour
Ramayapatnam port	Prakasam	Green field port	Port proposed for tourism
Kalingapatnam port	Srikakulam	Green field port	Fishing harbour operated, port proposed
Bheemunipatnam port	Visakhapatnam	Green field port	Proposed for ship building, captive jetty
Narasapur port	West Godavari	Green field port	Port proposed
Nizampatnam port	Guntur	Green field port	Fishing harbour operated port proposed
Vodarevu port	Prakasam	Green field port	Port proposed
Mutyalammapalem port	Visakhapatnam port	Green field port	Port proposed



3.2 Visakhapatnam port:

Located in the east coast, it is the only major port in Andhra Pradesh. It is located mid-way between Kolkata port and Chennai port. The port handled 72.72 million tonnes of cargo in 2019-20 which is the third largest volume of cargo handled in all the major ports. It consists of 27 berths. 19 general cargo berths in the inner harbour, 3 oil wharfs, 1 channel berth, 1 LPG berth, 1 SPM berth, VGCB and Visakha container terminal

The other five operational ports are

1. Kakinada deep water port
2. Kakinada anchorage
3. Gangavaram port
4. Krishnapatnam port
5. Rawa port

All the non – major ports are under PPP mode and they collectively handled 99.91 million tonnes of cargo in the fiscal year 2019-20.

3.3 Kakinada deep water port:

This port is located in East Godavari district of Andhra Pradesh. This port is under PPP mode under state government and “Kakinada seaports limited”. This port handled 15.4 million tonnes of cargo in 2019-20.

3.4 Kakinada Anchorage port:

This port is also in PPP mode under state government and “Kakinada seaports Limited”. This port handled 1.6 million tonnes of cargo in 2019 – 20. It consists of 9 berths. 7 main berths and 2 OSV berths.

3.5 Krishnapatnam port:

This port is in Nellore district of Andhra Pradesh. This port is Under PPP mode “Navayuga Engineering group” which is a flagship entity of “CVR group”. This port handled 48.14 million tonnes of cargo in 2019-20. Now, it is taken over by Adani ports and terminals under BOST (Build – operate – share – transfer) for 50 years. The port is handling the largest volume of cargo in the state after Visakhapatnam port. It has 14 berths available and one container terminal.

3.6 Gangavaram port:

Gangavaram port was given to “DVS Raju” led consortium in a bidding process in 2003. This port handled 34.49 million tonnes of cargo in 2019-20. It has 9 berths available.

3.7 Rawa port:

It is a captive port located in east Godavari district of Andhra Pradesh. Rawa port handled 0.74 million tonnes of cargo.

3.8 AP MARITIME BOARD:

It came into force from December 16, 2019 as per the AP maritime Board Act, 2018.

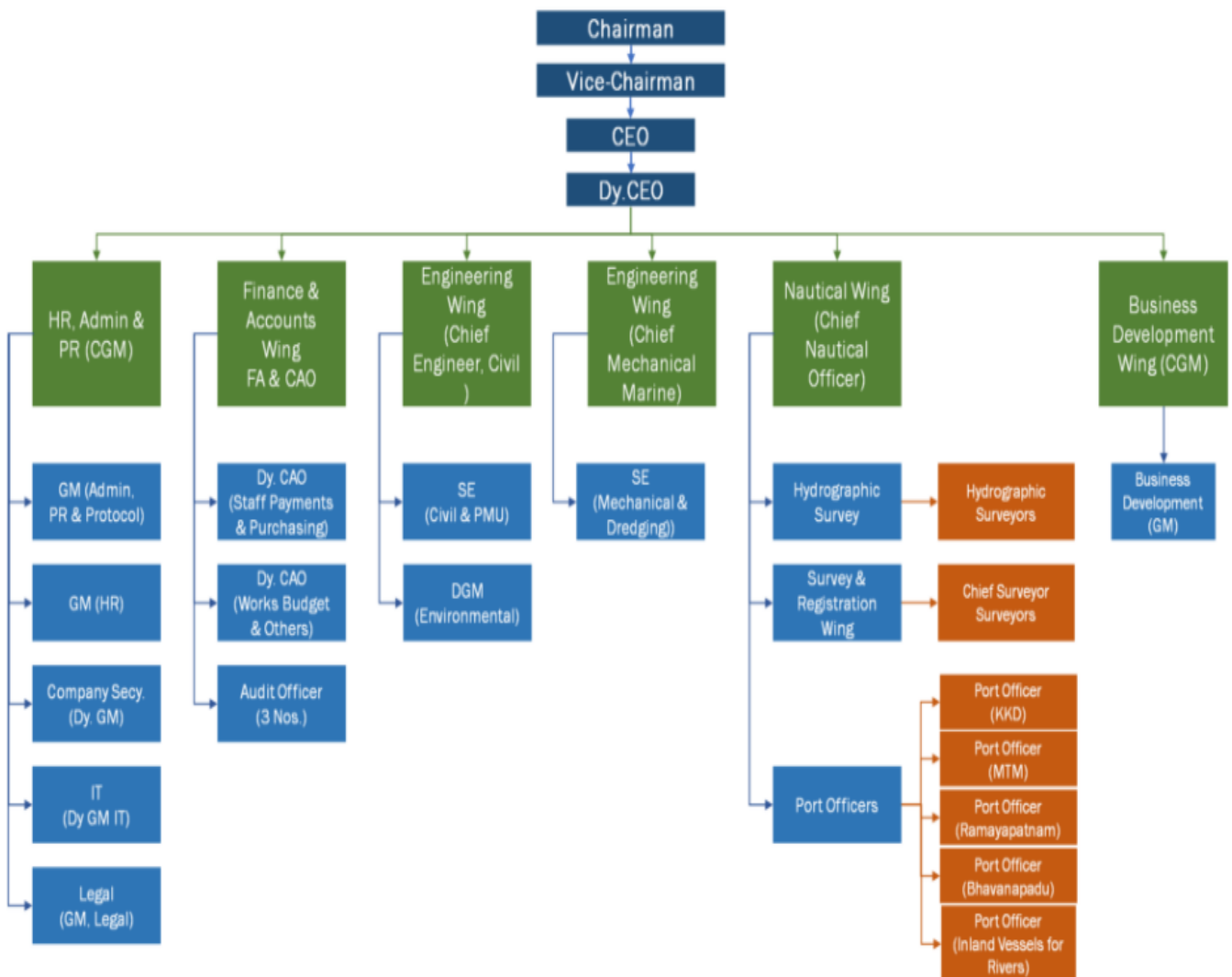
The headquarters are in Visakhapatnam and it’s main purpose is to develop port sector and all round development for hinterland connectivity and other off – shore areas for port uses.

The organisation will also promote the industries near the port areas.

The organisation consists of a chairman appointed by the state government, state and central officials, representatives from the Indian navy, coast guard and representatives of private ports industry associations.

3.8.1 organisation chart:

AP Maritime Board Organization Chart



This board is responsible for planning and development and monitoring of all ports in the state.

The functions of maritime board are:

1. It will maintain a master plan to achieve goals, with development forecasts of current operational ports and further infrastructure creation.
2. It will perform all activities in a transparent manner.
3. It will ensure that it will exercise all the rights and regulations for a speedy development of ports. The board ensures that all the commercial and operational activities can be performed in a free manner and are available to them under this policy.
4. With all its powers and functions as a statutory authority, the board will not act in any way to violate the rules and regulations in terms of states existing agreements.
5. The board is the custodian of all assets owned by state government. It should be the board's decision for land lease agreements, state support agreements and existing concessions.
6. It will decide the development of all future ports either greenfield or captive ports.
7. The board is responsible for future concessions. It will be responsible for any procurements, selection of developers etc.,
8. The board will define performance parameters for all the ports in the state, based on the existing standards and creating benchmarks.
9. It will conduct periodical financial audits and performance audits of operations. It will also conduct user surveys, define performance standards etc., and make them available in public domain.

3.9 Strategies to improve trade:

The state government have derived certain policies to renew the export growth. They are

1. Augment Warehouse and Storage facilities:

A major constraint is lack of transportation as perishable products are more prone and they account for significant exports. The state can also develop cold – chain network as mostly sea food is exported. It is currently having about 1.1 million MT warehousing capacity.

2. Establishment of Coastal economic zones:

Fourteen Coastal Economic Zones are identified in India in which two are in Andhra Pradesh, Kakinada and Visakhapatnam. This creates enough infrastructure for the concerning exports and these zones can be compensated through incentives from the Government of India.

3. Setting up a Promotion council:

Andhra Pradesh export promotion council is set up with support from the state government for the industries, exporters for providing information and guidance.

4. Raw material Banks:

Availability of raw material for manufacturers is a big constraint as high fluctuations in the demand are seen for some products. To ensure timely supply of raw materials to manufacturers, raw material banks are set up by department of Industries in sectors like textile, engineering, agro and food. In this the promotion council can also make recommendations in all the above industries based on the assessment of supply and demand and export-oriented production in the state.

5. Export promotion performance measure system:

A performance-based system needs to be developed for measuring the efficiency and effectiveness of the strategies for export promotion.

This can include assessment of utilization of ports, certification facilities, training and capacity building etc.,

This performance can be compared with actual trade statistics of the state which helps in analysing the goals for next financial year and devising the action plan.

3.10 Maritime India Summit 2021:

The ports have also signed MOUs regarding the development of ports in Maritime India Summit 2021:

The following are the MOUs signed by the Visakhapatnam port trust:

Sl no	Name of project	Name of stakeholder	Amount (Inr crores)
1	Allotment of land of 110 Acres for capacity expansion.	Hindustan Petroleum Corporation Limited	26,264
2	Allotment of Land 157 Acres of land for enhancing the present capacity of the palletisation plant.	AM/NS INDIA (J.V Between Arcelor Mittal and Nippon Steel Corporation)	600
3	Mechanization of WQ 7 & 8	Indian Port Rail & Ropeway Corporation Limited	288

4	Construction of the Project for Development of Flyover Bridge from seahorse junction area to dock area of V.P.T (PMC)	Indian Port Rail & Ropeway Corporation Limited	240
5	Mechanization of EQ 7 berth	Indian Port Rail & Ropeway Corporation Limited	200
6	Improving the capacity utilization of OR-1 and OR-2 berths in Inner Harbour for up upgrading the facility to handle Panamax class tankers with a draft of 14.5 meters	ITD Cementation Ltd.	167
7	Handling of Cargo 4.5 MMT per annum for a period of 3 years	Steel Authority of India Limited	150
8	Sand trap dredging and beach nourishment at R.K Beach for 5 years	Dredging Corporation of India Limited	125
9	Development of Fishing Harbour	JD Fisheries (Govt. of A.P)	100
10	Allotment of 8.5 Acres for construction of Warehouse for cargo handling	Rain CII Carbon Vizag Limited	75
11	Road connectivity from outer harbour to port connectivity junction (B) at	National Highways Authority of India	68.08

	Vizag port (development of existing two lane road to four lane road from East Break water to convent junction. (Approx. 3.70 Kms)		
12	Allotment of 3.5 Acres for construction of warehouse for cargo handling	Sarat Chattergy & Company	60
13	End to End Logistics by Vizag Port for Coal handling of One million tonne for one year	Tamil Nadu Generation and Distribution Corporation	57
14	Allotment of 2.5 Acres for construction of warehouse for cargo handling	Sarat Chattergy & Company	40
15	Construction of grade separator from H-7 area to Port connectivity road bypassing	National Highways Authority of India	39.39
16	Installation and Operation of Harbour Mobile Crane for higher productivity	INTEGRAL	38
17	Installation and Operation of Harbour Mobile Crane for higher productivity	Orissa Stevedores Company	38
18	Construction of covered storage sheds	Sagarmala Development Company Limited	36.38

19	Up-gradation of Fire Fighting Facilities for OSTT Berth to accommodate Vessels of capacity 1,00,000 DWT and above (Cape size Vessels)	Hindustan Petroleum Corporation Limited	32
20	Allotment of 2.5 Acres for installing Gas Station	Andhra Pradesh Gas Distribution Company	30
21	Installation of scanners	Smith Detection (Asia Pacific) PTE Ltd	29
22	Revamping of R&D yard for a period of 1 year	East Coast Railways	28.40
23	Improvement of railway tracks and rectification of sharp curves of more than 10 degrees of Visakhapatnam Port Trust	East Coast Railways	26.97
24	Electrification of VPT Railway lines - 38TKM	Indian Port Rail & Ropeway Corporation Limited	22.57
25	Up gradation and maintenance of Railway tracks in Eastern sector	Indian Port Rail & Ropeway Corporation Limited	19.62
26	Revamping of R&D yard to Railway standards by providing RRI for R&D yard and panel interlocking for individual cabins at VPT	East Coast Railways	5

Andhra Pradesh Maritime Board Has also signed MOUs regarding the development of state ports. The following are given:

S.No.	Name of the project	Name of the stakeholder	Amount (INR crore)
1.	Multipurpose Deep-water port at Kona village, Thondangi Mandal	Kakinada gateway port limited	15000
2	Development of LNG terminal at Kakinada Deep – water port	KSPL and ESPL	4800
3	Development of multipurpose terminals and other ancillary facilities	Krishnapatnam port company limited	3000
4	Establishment of ship building yard and dry dock	GBS infra pvt ltd	2500
5	Establishment of specialized cargo terminal at gangavaram port	Gangavaram port limited	2000
6	Oil and chemical tank farm storage infra development work	Marati storage terminals private limited	120
7	Establishment of shrimp processing plant in Kakinada anchorage port	KM enterprises, kakinada	25
8	Establishment of rice warehouse and processing plant at Kakinada anchorage port	Sri Lalitha enterprises Private limited	25

9	Establishment of LPG gas bottling unit at Kakinada Anchorage port, with future import facility	Tirumalesa logistics, kakinada	18
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3.11 Economy of India:

The growth of Indian economy was at slow pace of 3.9% during the first forty years post – independence. This was slow due to its transition from princely states to the adoption a democracy with a semi – socialist development model.

This was hindered by excessive economic control and lack of infrastructure – socially, physically, economically and to a certain extent even politically. However, it must be put into perspective that it does not mean India had no progress – the green revolution, white revolution and five-year plans for various infrastructural developments – etc.,

It is in the 1990s when India opened up and introduced various policies that favoured liberalisation, privatisation and globalisation it soared to rise and become the 12th largest economy the world. India had achieved a 5.5% growth rate in this decade with its per capita income rising at a rate of 4%

With the onset of 2012 India entered a period of reduced growth, which slowed to 5.6%. other economic problems also started cropping up and causing a hole in the Indian economy which had been having a rising phase. Some of these problems were a plunging Indian rupee crashing against the US dollar and devaluation, a persistently high current account deficit and slow-paced industrial growth to name a few.

India started recovery in the financial year of 2012 – 13 when the GDP growth rate accelerated to 6.4% from the previous year FY 2012 – 13, 5.5%. The acceleration continued through 2014 – 15 and 2015 – 16 with growth rate of 7.5% and 8.0% respectively with India reaching its all –

time high. For the first time since 1990, India was growing much faster than that of China's which had registered 6.9% in 2015. However, the growth rate subsequently decelerated to 7.1% and 6.6% in 2016 – 17 and 2017 -18 respectively. This can be attributed to the disruptive effects caused by the demonetisation of the Indian currency notes and the GST (goods and service tax) implementation in a rather botched – up manner.

NITI Aayog refers to an update provided by S&P Global in its recent update for the Indian economy projected a 10% year – on – year growth in FY 2021 – 22. It mentioned that consistently good agricultural performance, flattened coronavirus infection curve and government spending have all supported economic recovery.

Recently, a Goldman Sachs report stated that the BRIC countries that is Brazil, Russia, India and China were poised for growth in the next 50 years and would collectively play a much more forceful and assertive role in the World's GDP and economy. There is a possibility of India becoming the world's 3rd largest economy in these 50 years to come.

CHAPTER IV
ANALYSIS AND INTERPRETATION

4.1 Methodology used:

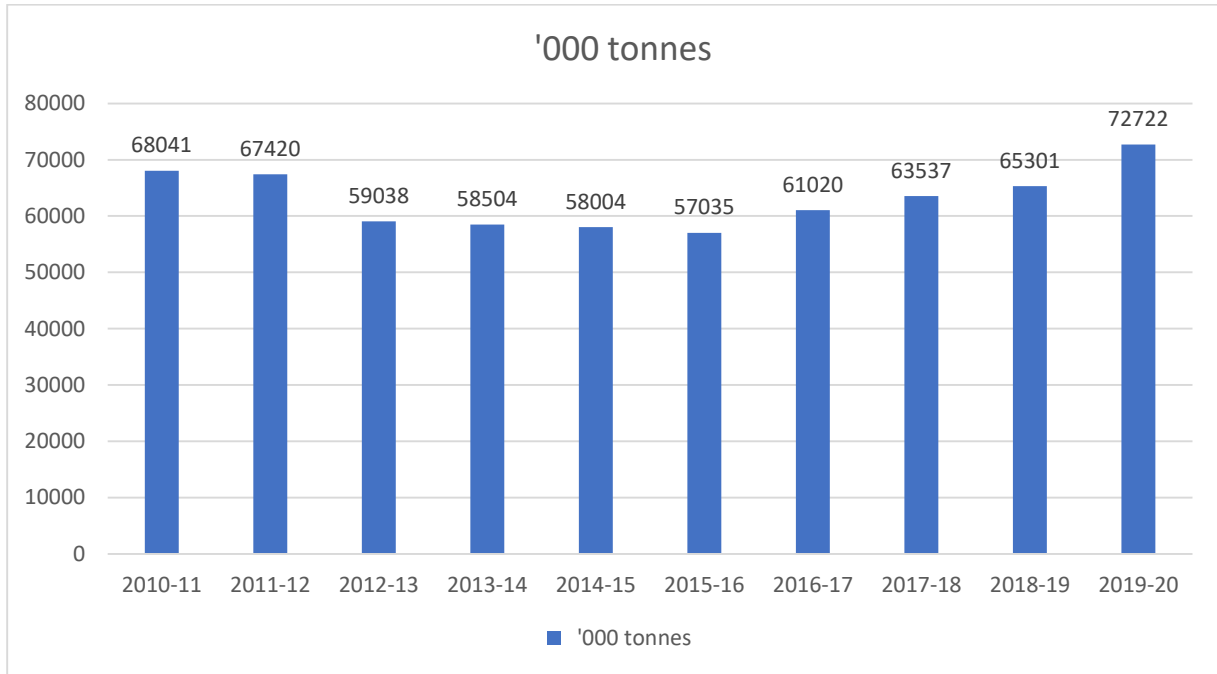
This study is a research and was conducted on the basis of a certain research methodology. Research methodology refers to a specific process, procedures, techniques or even implementing certain software tools with an aim to conduct research. There is a certain methodology involved in every aspect of the research. It begins with the identification of particular topic, its selection followed by search and collection of data, processing it with a particular set of objective framework and finally analysing the results after processing. This analysis is backed by a set of concrete facts, previous research literature work pertaining to the field, the researcher's interpretation and providing direction to a scholar or potential researcher in the domain of the topic.

The research aims at studying the trend in the cargo handled and the employment generated by the ports in Andhra Pradesh over a period of 10 years from 2010 -11 to 2019 – 20 and the impact on the Indian economy. Due to limitations and constraints with the current pertaining COVID -19 scenario had to be based on secondary data sources. For the background study, various research papers and articles were collected and thorough reading of the same was done to have various inputs from researchers conducted prior to this. As for data collection, secondary data was published by various departments of Government of India and Government of Andhra Pradesh are taken. Data regarding the cargo trend and employment are taken from Basic port statistics published by the Indian shipping ministry website. Data regarding all the information on Ports was taken from AP maritime board website.

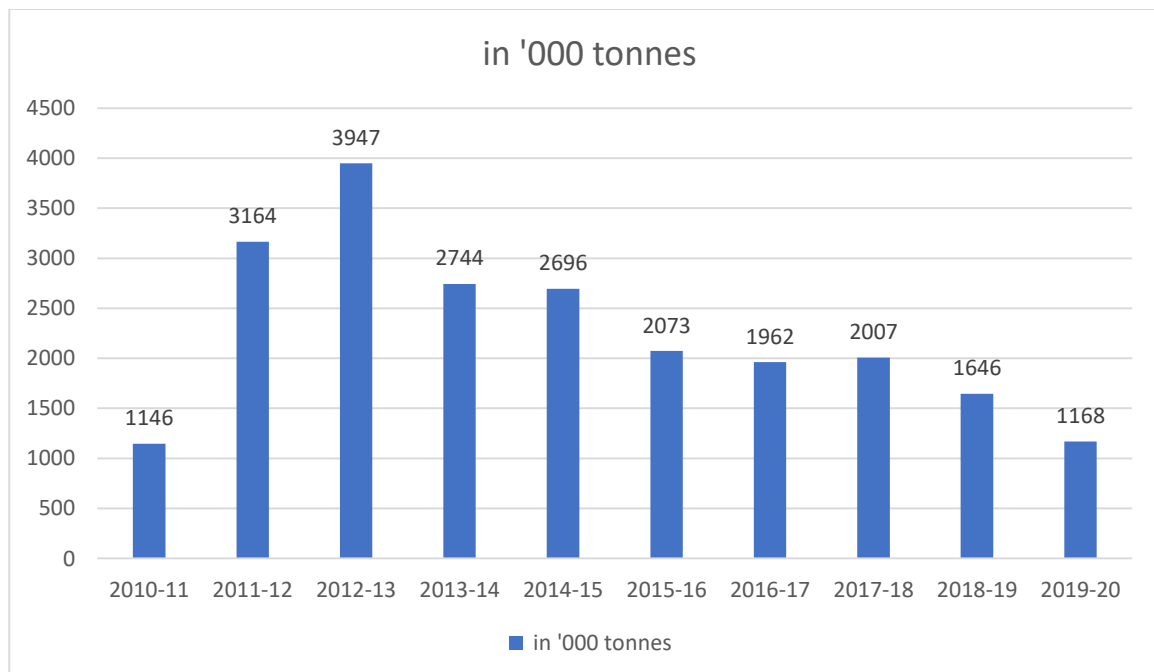
4.2 Analysis of the study:

A. Traffic handled at ports:

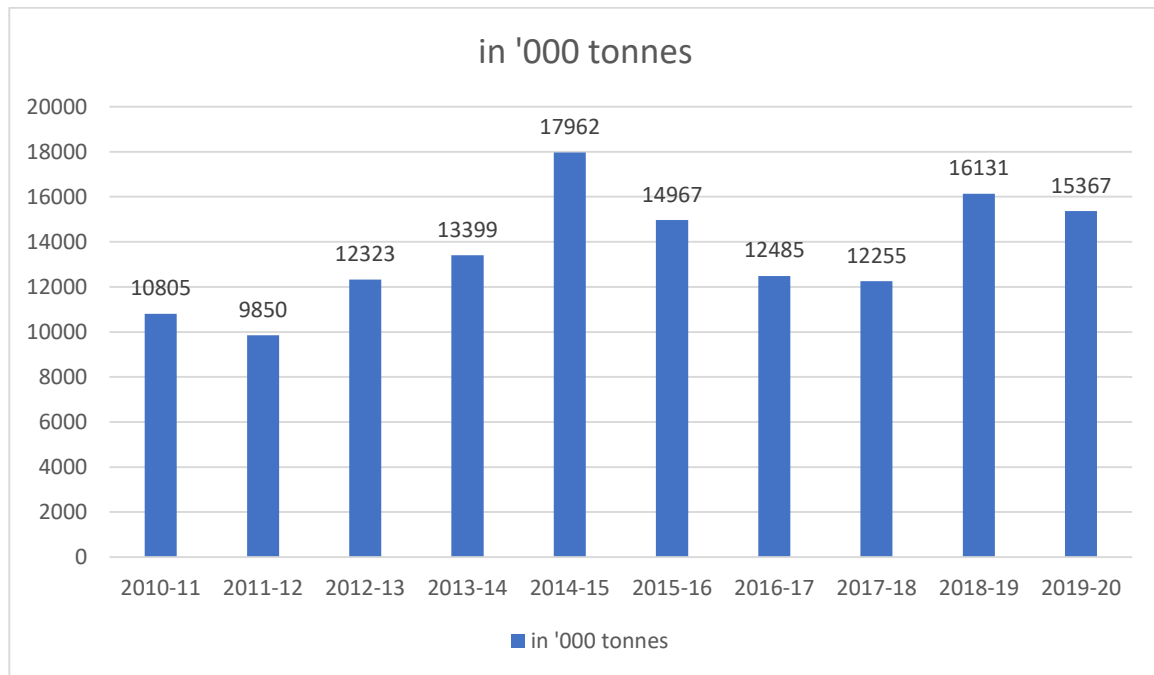
1. Visakhapatnam port trust



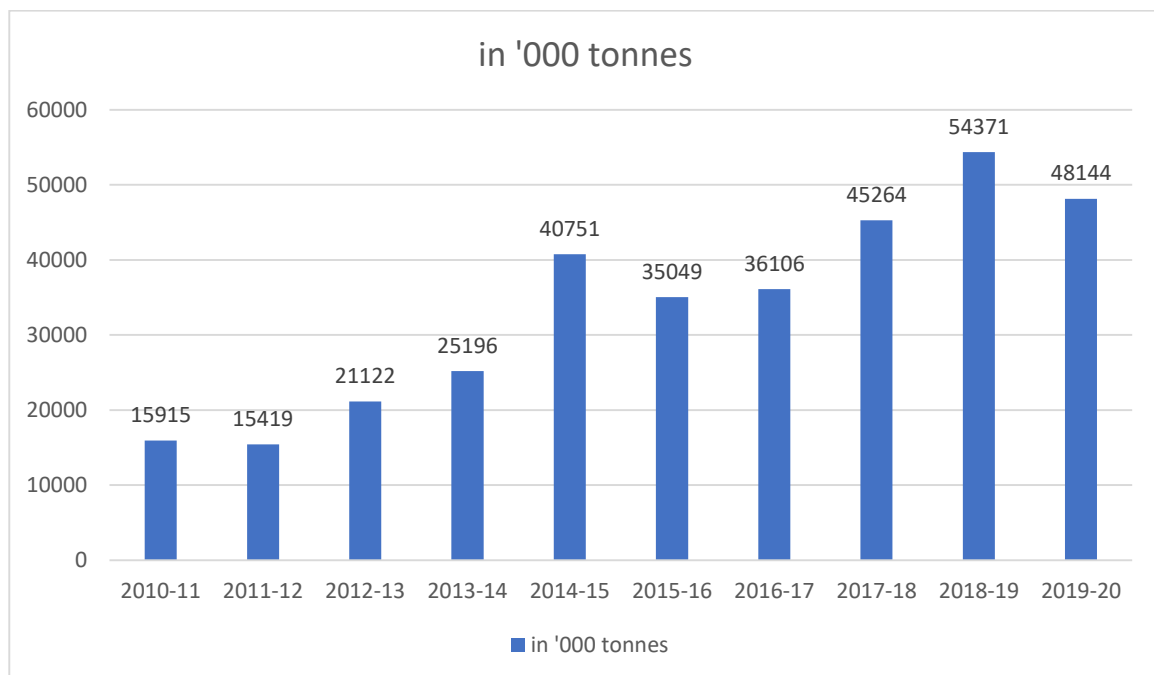
2. Kakinada anchorage port



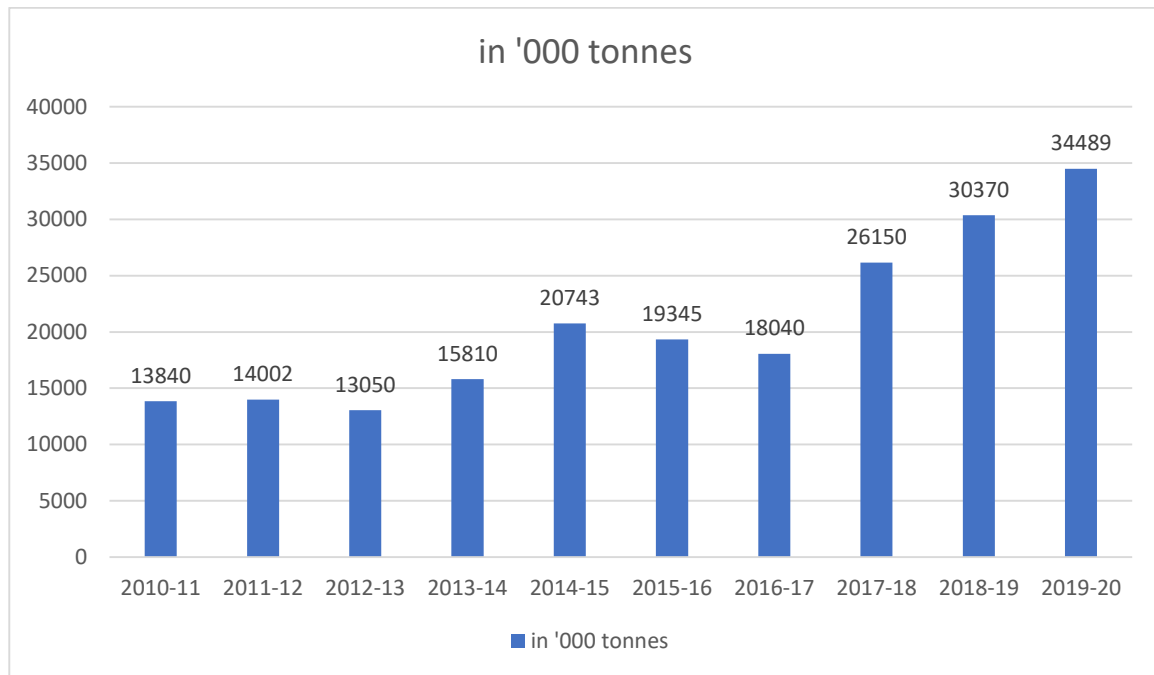
3. Kakinada deep water port



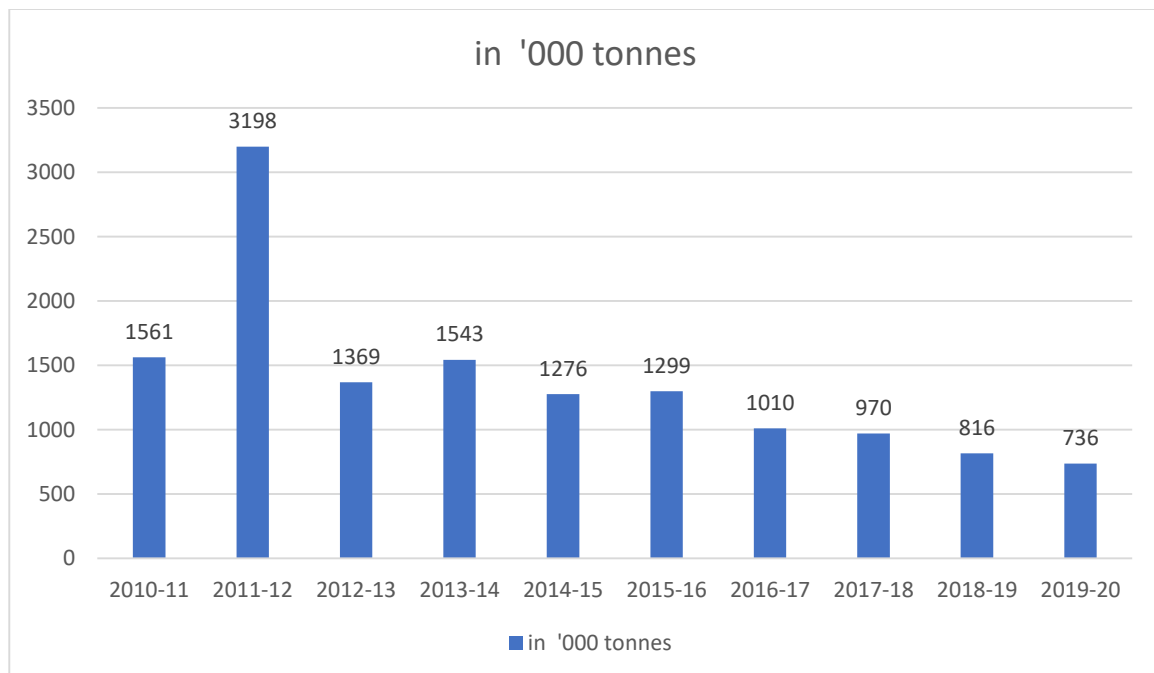
4. Krishnapatnam port



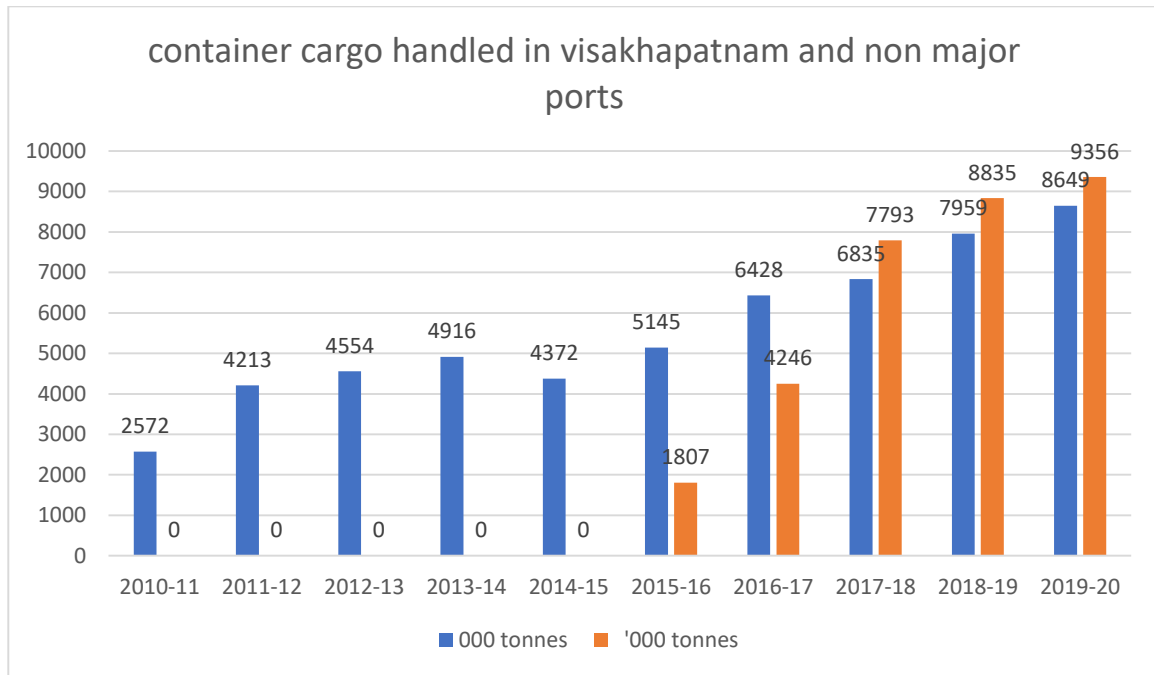
5. Gangavaram port



6. Rawa port



B. Container cargo handled



C. Employment at ports:

1. Visakhapatnam port:

Year	Total	Total employment of major ports in India	Percentage
2010-11	5579	53000	10.52
2011-12	5063	53000	9.55
2012-13	4941	52000	9.50
2013-14	4703	45000	10.45
2014-15	4596	42000	10.94
2015-16	4158	38000	10.94
2016-17	3678	35000	10.50
2017-18	3516	32000	10.98
2018-19	3348	29000	11.54
2019-20	3150	26000	12.11

2. Employment in non – major ports

YEAR	Employment in non – major ports	In all non-major ports	Percentage
2010-11	269	3000	8.96
2011-12	1153	3000	38.4
2012-13	1195	5000	23.9
2013-14	1195	6000	19.91
2014-15	789	4000	19.725
2015-16	789	4000	19.725
2016-17	2153	5000	43.06
2017-18	2153	5000	43.06
2018-19	2278	5000	45.56
2019-20	2331	5000	46.62

3. Employment as a percentage of total in all ports:

YEAR	Total employment in AP PORTS	Total employment in all ports	Percentage
2010-11	5848	56000	10.44
2011-12	6216	56000	11.1
2012-13	6136	57000	10.76
2013-14	5898	51000	11.56
2014-15	5385	46000	11.70
2015-16	4947	42000	11.77
2016-17	5831	40000	14.57
2017-18	5669	37000	15.32

2018-19	5626	34000	16.54
2019-20	5841	31000	17.68

4. Commodity wise traffic handled at Visakhapatnam port:

COMMODITY WISE TRAFFIC HANDLED AT VISAKHAPATNAM PORT										
YEAR	POL & PRODUCTS	IRON ORE	FERTILIZER	FRM	FOOD GRAINS	COAL	OTHERS	CONTAINER CARGO		TOTAL
								000 TONNES	000 TEUS	
2010-11	19242	19347	3268	811	203	11464	11134	2572	146	68041
2011-12	17428	16243	3719	832	517	10063	14405	4213	234	67420
2012-13	13501	12569	2023	565	1121	9746	14959	4554	247	59038
2013-14	12960	13032	1819	795	817	9672	14493	4916	262	58504
2014-15	13129	8365	1838	720	75	8853	20652	4372	248	58004
2015-16	14873	6088	1996	799	86	8501	19547	5145	243	57035
2016-17	13051	11620	1886	778	559	7760	18938	6248	367	61020
2017-18	13057	10872	1953	920	76	8712	21112	6835	389	63537
2018-19	14861	10897	2126	985	2	7578	20893	7959	451	65301
2019-20	16098	14889	2059	899	2	8373	21753	8649	409	72722

5. Commodity wise traffic handled at all non - major ports:

COMMODITY WISE TRAFFIC HANDLED AT NON MAJOR PORTS('000 tonnes)								
YEAR	POL & PRODUCTS	IRON ORE	BUILDING MATERIAL	FERTILIZER & FRM	COAL	OTHERS	Container	TOTAL
2010-11	2.79	8.96	0.48	5.8	19.65	5.62	0	43.3
2011-12	3.51	2.97	0.86	7.04	23.51	7.75	0	45.64
2012-13	1.76	0.98	1.11	5.13	30.85	11.97	0	51.8
2013-14	1.71	1.47	1.55	5.45	48.66	12.55	0	71.39
2014-15	1.4	10.53	2.49	5.36	35.96	14.97	0	70.71
2015-16	1.43	1.62	1.98	5.95	46.2	15.28	1807	1879.46
2016-17	2.71	2.98	1.66	4.87	39.52	17.86	4246	4315.6
2017-18	1.45	5.95	1.73	5.11	45.26	26.79	7793	7879.29
2018-19	1.4	8.13	2.39	7.49	56.31	27.62	8835	8938.34
2019-20	1.41	5.42	1.13	6.15	55.03	30.76	9356	9455.9

6. Commodity wise traffic handled at Kakinada deep water port:

COMMODITY WISE TRAFFIC HANDLED AT KAKINADA DEEP WATER PORT (IN TONNES)							
YEAR	POL & PRODUCTS	IRON ORE	FERTILIZER	COAL	OTHERS	CONTAINER CARGO	TOTAL
2010-11	964000	1018000	3125000	1500000	2730000	0	9337000
2011-12	115000	509000	3948000	948000	2284000	0	7804000
2012-13	231000	136000	2349000	2313000	4066000	0	9095000
2013-14	0	115000	2986000	2041000	5430000	0	10572000
2014-15	0	15000	3508000	5251000	6486000	0	15260000
2015-16	10000	0	3589000	2483000	6124000	0	12206000
2016-17	19000	47000	3076000	1179000	6512000	0	10833000
2017-18	45000	16000	3900000	848000	6673000	255000	11737000
2018-19	8000	0	4964000	3432000	6139000	198000	14741000
2019-20	1000	0	3857000	3084000	5779000	153000	12874000

7. Commodity wise traffic handled at Kakinada anchorage port:

COMMODITY WISE TRAFFIC HANDLED AT KAKINADA ANCHORAGE PORT						
YEAR	FOOD GRAINS	FERTILIZER	COAL	OTHERS	CONTAINER CARGO	TOTAL
2010-11	746000	123000	147000	88000	0	1104000
2011-12	2020000	10000	0	1084000	0	3114000
2012-13	2815000	0	0	1114000	0	3929000
2013-14	2715000	0	0	0	0	2715000
2014-15	2659000	0	0	0	0	2659000
2015-16	2018000	0	0	0	0	2018000
2016-17	1914000	0	0	0	0	1914000
2017-18	1956000	0	0	0	0	1956000
2018-19	1624000	0	0	0	0	1624000
2019-20	1149000	0	0	0	0	1149000

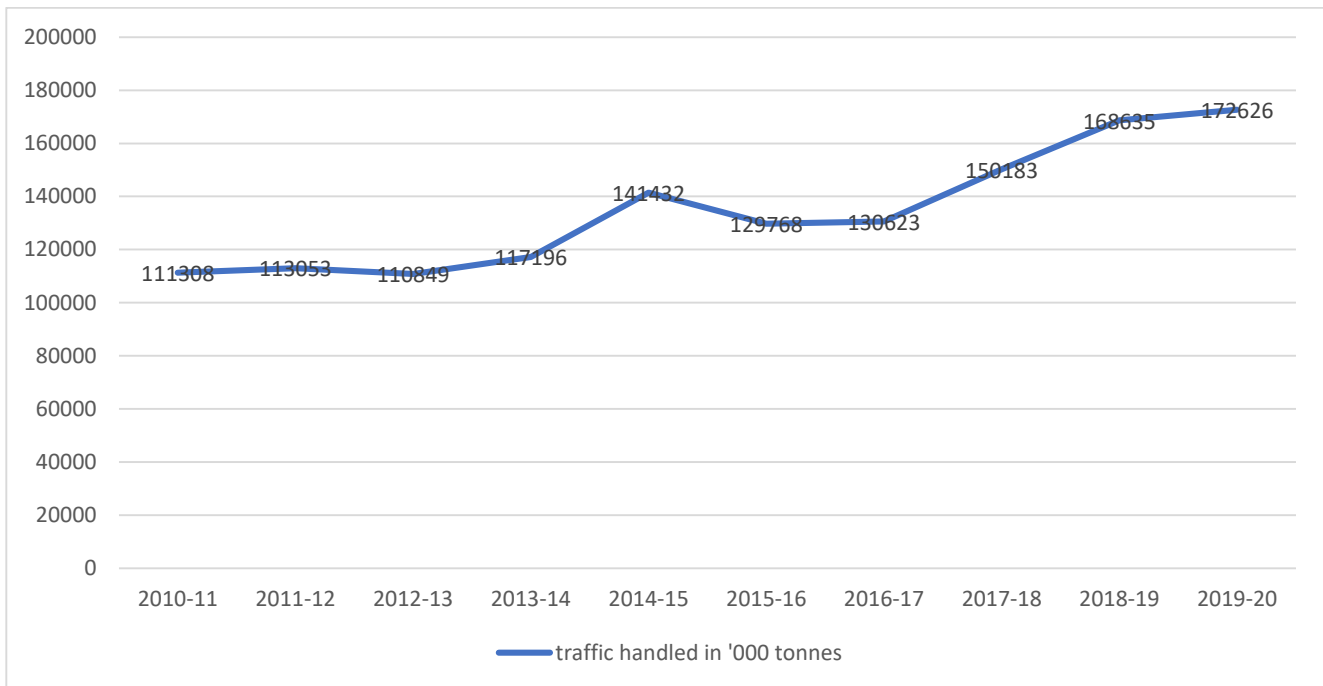
8. Commodity wise traffic handled at krishnapatnam port

COMMODITY WISE TRAFFIC HANDLED AT KRISHNAPATNAM PORT							
YEAR	BUILDING MATERIAL	IRON ORE	FERTILIZER	COAL	OTHERS	CONTAINER CARGO	TOTAL
2010-11	456000	5355000	2115000	7389000	590000	0	15905000
2011-12	744000	90000	2197000	10629000	1343000	0	15003000
2012-13	984000	148000	1553000	14979000	2262000	0	19926000
2013-14	1031	0	1402000	17834000	3012000	0	22249031
2014-15	1144000	8530000	1208000	21454000	3621000	0	35957000
2015-16	1102000	1201000	817000	20576000	5509000	0	29205000
2016-17	1145000	608000	678000	19864000	7152000	0	29447000
2017-18	1414000	2999000	526000	29130000	4499000	7525000	46093000
2018-19	695000	5227000	1559000	24092000	4397000	8538000	44508000
2019-20	283000	383000	1242000	21279000	6123000	6712000	36022000

9. Commodity wise traffic handled at gangavaram port:

COMMODITY WISE TRAFFIC HANDLED AT GANGAVARAM PORT						
YEAR	FERTILIZER	IRON ORE	COAL	OTHERS	CONTAINER CARGO	TOTAL
2010-11	365000	2584000	9587000	1304000	0	13840000
2011-12	823000	2141000	9959000	1079000	0	14002000
2012-13	1162000	272000	9865000	1751000	0	13050000
2013-14	990000	940000	11710000	1650000	0	15290000
2014-15	600000	513000	15710000	3390000	0	20213000
2015-16	1500000	0	14955000	2620000	0	19075000
2016-17	895000	580000	11045000	3968000	0	16488000
2017-18	680000	188000	16210000	4305000	0	21383000
2018-19	962000	500000	18385000	7439000	0	27286000
2019-20	1033000	3240000	19953000	7606000	0	31832000

D. Trend in traffic handled at all ports in Andhra Pradesh:



E. Traffic handled in ports of AP as a percentage of total (in '000 tonnes):

YEAR	All ports in AP	All ports in India	Percentage
2010-11	111308	885450	12.57
2011-12	113053	913930	12.36
2012-13	110849	933750	11.87
2013-14	117196	972460	12.05
2014-15	141435	1052230	13.44
2015-16	129768	1071760	12.10
2016-17	130623	1133690	11.52
2017-18	150183	1208580	12.42
2018-19	168635	1281780	13.15
2019-20	172626	1319980	13.077

4.3 interpretation of the data:

By the analysis, we can interpret that

1. The base year taken is 2010 – 11 for all graphs and tables.
2. The cargo handling radically increased and decreased till 2016 – 17 but after that it started progressive increase.
3. The employment generated in Visakhapatnam port is a mediocre percentage of all the major ports combined which is in the range of 9.55 – 12.11%.
4. The employment generated by non – major ports in Andhra Pradesh have become a considerable amount growing from year – on – year. The total employment provided by the Non – major ports in AP are consistently increased from 8.9% to 46.5% of all the employment provided by all the non – major ports in India.
5. The casual workers in non – major ports also increased from 450 to 14199 in numbers.
6. POL & products are handled more in the Visakhapatnam port.
7. Coal is the main cargo handled in the non – major ports.
8. Container cargo handling in Visakhapatnam terminal is continuously increasing from 2010 to 2020.
9. The container handling operations in non – major ports did not start until 2015 and continuously increasing from then. The non – major ports handled more tonnes in container trade than Visakhapatnam port.
10. The container handling in Visakhapatnam port trust increased from 2.5 million tonnes to 8.6 million tonnes in a span of 10 years.
11. The container handling in non – major ports increased from 1.8 million tonnes to 9.3 million tonnes in a short span of 5 years.
12. The trend analysis of the all ports shows that the graph is increasing continuously from 2010 – 11 to 2019 – 20. The values are increasing from 111,308 tonnes to 172626 in thousand tonnes.

13. The percentage of traffic handled is almost same in the ten years which is approximately 12 – 13% of the total cargo handled by all Indian ports.

4.4 Opportunities of ports in Andhra Pradesh:

1. Focusing on Govt. of India policy on removing infrastructure bottlenecks, further enhancement of industries and associated trade by Govt. of India policy, strong development of Indian economy leading to trade and traffic growth, plans for substantial investments by industries in hinterland of Visakhapatnam indicating potential growth.
2. Increase in private sector participation: for example, all the operational non – major ports are operated by private operators.
3. Setting up port based SEZs: The economic zones are in close proximity to several ports and this brings a strategic advantage to industries within these regions.
4. Focus of draft depth: All green field ports are developed with increased draft and operational ports are investing on improving their draft depth.
5. Ports are targeting to operate on Renewable energy.
6. Visakhapatnam – Chennai Industrial corridor is a major initiative which is proposed under the East coast economic corridor which is aligned into the golden quadrilateral and is meant to play an important role in India's look east policy.
7. The state has a excellent coastline and it have an ability to develop such modern and large capacity ports that can help enable competitive logistics and consequently competitive manufacturing activity in the corridor.

4.4.1 challenges of ports in Andhra Pradesh:

1. Limited land available for providing to ports for development especially near the coastline is the key challenge that needs to be focused. The main existing and further port developments will have to plan accordingly to make the efficient use of the low available land near the coast.
2. Majority of cargo handled in non – major ports like Kakinada and Krishnapatnam port are coal and iron ore. Right now, Kakinada Anchorage port and Gangavaram are not handling container cargoes. This has to be changed. With proper planning, it can enable the state to cater the expected increase in container traffic apart from the bulk commodity traffic.
3. Despite the operational and green field development locations the cargo handled by the non – major ports is less than one major port. So, it is necessary to diversify the port locations to provide more options for port users.
4. Most of the cargo handled by the ports are used in the state only. However, considering the location of the coastline, there is a need for the ports to tap into certain areas that arise in the hinterland. This would enable non – major ports to get container cargo from north and central regions of India and also developing the logistics linkages.
5. Major ports and non – major ports come under different jurisdictions.
6. Most PPPs are regulated usually in terms of cargo they handle.
7. Cabotage laws in India are very strict.
8. Displacement is the main concern in developing Gangavaram port.
9. Dredging causes environmental problems affecting local productivity of the local waters and its fisheries.

CHAPTER V
FINDINGS AND CONCLUSIONS

5.1 Findings of the study:

This study was a comprehensive study on the impact of ports in Andhra Pradesh and their impact on the economy.

It was seen that the cargo handling volume increased and on that the charges collected on them will increase and based on that profit percentage also increases. Although the profit percentage for non – major ports is not available, we can infer that the volume of cargo handled increased year – on -year and the taxes paid by the operators to the government also increases which results in development of State Gross Domestic Product (GSDP). Approximately 40% of GSDP of Andhra Pradesh is from tertiary sector.

Employment creation also have a impact on economic growth and this reduces the poverty among the people. According to above study, the non – major ports in Andhra created more jobs than any other maritime state in India. Although there is a reduction in jobs at a national level, the registered workers increased rapidly. Also, the major ports sector reduced jobs from 50000 to 35000, the percentage of workers registered in Visakhapatnam port trust have increased from 9% to 13%.

The global employment report states that secure jobs with social benefits offer a way out of poverty, which explains why employment is a key pillar of development. Another important thing is improved infrastructure which facilitates the growth of companies that create jobs. The income generated as a result boosts the economy and employment.

The green field locations which are already operational till some time and now are given to private companies to develop like Machilipatnam port are now developed with the view of larger vessels and also container cargo handling equipment.

5.2 Suggestions:

The port sector is improving and definitely impacting the economy of the state and the country. As a state the trade happens mainly in road and railways but at a national level, almost 95% of goods are transported by sea.

Based on the study, the researcher proposes to put forward the following suggestions:

1. More capacity utilization of the operational state ports and major port.
2. Visakhapatnam port is designed for a capacity of 130 million tonnes per annum but it is utilizing 72 million tonnes.
3. More deep - water draft ports are to be developed in green field areas and also the existing operational ports also should increase the draft and berth size to accommodate mother vessels.
4. The cargo handled by these ports are consumed proximally. They should ensure that to develop rail and road connectivity from the port to the hinterland to manage and trade goods from all over the country. This will reduce logistics cost.
5. By all this pollution will also increase, which will be a threat to the local environment. Measures are taken to use renewable energy such as Visakhapatnam port is already using solar power for their energy requirements.
6. Ultimately, the goal is to increase the exports from the state to have a stable economy and at the same time to meet the demands without hindering the development of nation.
7. The rules and regulations framed by the maritime board of Andhra Pradesh are benchmarked and they should be achieved for the time period they specified and no delays should be present

5.3 Conclusion:

It is understood that ports are lifelines for trade among the countries and they constitute a major amount of GDP for the nation. Even currently if it comes to cargo handling and technology ports in Andhra or even India are lagging behind the other countries like China, Germany and some of the ports in USA.

Indian economy is highly domestic trade and low extent to export. There is a huge trade deficit concerning the economy which in turn de stabilizes the economy.

Although Andhra Pradesh is the third largest state in handling cargo, when it comes to contribution to the GDP of the country it is in 5th position.

The export promotion council set up by the government of Andhra Pradesh is taking measures to enhance the exports of the state and to reduce the logistics costs thereby.

The state got industries like KIA in the vehicle sector which is manufacturing and exporting cars from 2016. Foreign direct investments are also present in some of the ports like Gangavaram port.

Dedicated freight corridor and four new port development in Andhra will be able to handle cargo upto 300 to 350 metric tonnes by 2024-25. The four major ports including Bhavanapadu port, Kakinada SEZ port, Machilipatnam port and Ramayapatnam port are in pipeline for development by 2024.

The efforts must be directed at using the resources available in the state and funding from the private organizations to develop and use the ports up to the capacity which leads to the port – led development for the industries and which in turn develops the ports. It is vital to create employment for skilled as well as unskilled professional such that it will contribute to the GSDP of the state and GDP of the nation.

5.4 Directions for future research:

This study is only conducted by taking past 10 years data i.e, from 2010 – 11 to 2019 – 20. The scope can be extended to a 20 – 25 years span research work to analyze the trend and also project into the future. Also restricting to one state and one parameter such as employment, it can be analyzed in many factors like, operating surplus of the ports and also the industries that are developed due to ports. But due to the data constraints, operating surplus for non – major ports are not available and correlation for them is not obtained. It can be analyzed using structural equation model (SEM)(Ziaul Haque Munim, 2018). It will give the accurate results by taking variables such as quality of port infrastructure, logistics performance and seaborne trade on national economy.

BIBLIOGRAPHY:

References for literature review:

1. [THE IMPACT OF INDIA'S ECONOMY ON THE DEVELOPMENT OF SEAPORTS](https://www.researchgate.net/publication/339765671)
2. <https://www.sciencedirect.com/science/article/pii/S2214241X15000413>
3. <https://jshippingandtrade.springeropen.com/track/pdf/10.1186/s41072-018-0027-0.pdf>
4. <https://www.sciencedirect.com/science/article/pii/S2092521211800015>
5. [On the Economic Impact of Ports National vs Local Costs and Benefits](https://www.researchgate.net/publication/295402196)
6. [Research Port led-development in Developing Countries for Effective and Efficient Maritime Transportation](https://www.researchgate.net/publication/345045667)
7. [Impact of Sea Port Infrastructure Development on Indian Economic Growth - An Empirical Investigation/links/563b353108aeed0531dd5fae/Impact-of-Sea-Port-Infrastructure-Development-on-Indian-Economic-Growth-An-Empirical-Investigation.](https://www.researchgate.net/profile/Jonardan-Koner/publication/283498073)
8. [Economic Impact of a Port on a Regional Economy Note](https://www.researchgate.net/publication/229564822)
9. <https://www.sciencedirect.com/science/article/abs/pii/S0967070X13000115>
10. [Logistics and economic growth A panel data approach](https://www.researchgate.net/publication/241035259)

official websites:

1. <https://vizagport.com/>
2. https://www.apindustries.gov.in/APIIndus/New_Images/whyInvestPorts.png
3. <https://kakinadaseaports.in/>
4. <http://www.gangavaram.com/about-port.htm>
5. <https://www.adaniports.com/Ports-and-Terminals/Krishnapatnam-port>
6. https://www.ap.gov.in/wp-content/uploads/2015/12/27112015ENYINFRA_MS14.pdf
7. <http://shipmin.gov.in/sites/default/files/mismou.pdf>

Other websites:

1. https://en.wikipedia.org/wiki/List_of_ports_and_harbours_of_Andhra_Pradesh
2. <https://www.thebizdom.in/maritime-history-of-andhradesa/>
3. <https://www.maritimeinvest.in/images/pdf/ap-port.pdf>
4. <https://www.eximbankindia.in/Assets/pdf/research-on-states/Andhra-Pradesh.pdf>
5. <https://abhipedia.abhimanu.com/Article/IAS/NTMwMQEEQ QVVEEQVV/A-comprehensive-analysis-of-ports-in-India---Issues-and-Challenges-Economic-Affairs>

