# A STUDY ON CONTAINER EXPORT FROM COCHIN PORT DURING 2018-19 to 2021-22

**PROJECT REPORT**

**Submitted to the School of Maritime Management (SMM),**

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**In**

**INTERNATIONAL TRANSPORTATION AND LOGISTICS MANAGEMENT**


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**SCHOOL OF MARITIME MANAGEMENT**

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**KOCHI CAMPUS**

# DECLARATION

I **ALAN ABRAHAM**, declare that this project report titled "A STUDY ON CONTAINER EXPORT FROM COCHIN PORT DURING 2018-19 to 2021-22", is submitted to Indian Maritime University, Cochin in partial fulfillment ofthe requirement for the award of **MASTER OF BUSINESS ADMINISTRATION (INTERNATIONAL TRANSPORTATION AND LOGISTICS MANAGEMENT)** during the academic year 2020-2022.

All the information in this document has been obtained to use only for academic purpose and is presented in accordance with academic rule and conduct under the guidance of **Dr. JAYAN P.A.**

I also declare that this report has not been submitted in full or part thereof, to any other university or institution for the award of any degree or diploma.

**ALAN ABRAHAM**

Place: **KOCHI**

Date:

## CERTIFICATE

This is to certify that the MBA Project Report entitled "A STUDY ON CONTAINER EXPORT FROM COCHIN PORT DURING 2018-19 to 2021-22" done by **Mr. ALAN ABRAHAM** and is submitted in fourth semester of **MBA INTERNATIONAL TRANSPORTATION AND LOGISTICS MANAGEMENT.** It is also certified that the above work has not previously formed the basis for the award of any degree, diploma association ship, fellowship or othersimilar titles, and it is an independent work done by the candidate.

DATE:

Dr. JAYAN P.A

(Internship Guide)

Internal Examiner

External Examiner

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# ABSTRACT

Export, Import, Shipping and its allied activities have made a huge impact on our everyday life. The play a huge role in how we live today, even though people do not realise its extent. Many of the packaged food that we eat today, the clothes that we wear, the mobile phones that we use became possible because of this industry. International Trade has changed how we live today. Containerisation and also Exports of different countries makes this possible. Exports are very important to a Country.

The Cochin Port is a major port on the Arabian Sea in the city of Kochi and is one of the largest ports in India. The port lies on two islands in the Lake of Kochi – The Willingdon Island and in Vallarpadam. The International Container Transshipment Terminal (ICTT), which is part of the Cochin Port, is the largest container transshipment facility in India. It is also the first transshipment port in India. It has a maximum draft of 14.5m. The terminal is operated by the Dubai Ports World (DPW), which will operate it for 30-years after which the control will come back to the Cochin Port Trust. This study was conducted to understand the movement of containerized cargo through Cochin port during the period 2018-19 to 2021 -22 and to understand the destinations to which they are being exported.

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# CHAPTER 1

# INTRODUCTION

## 1.1 Introduction

Exports form a major component of International trade. They are the goods and services bought by the resident of a country which are produced by a different or foreign country. Exports and Imports make up the trade balance of a country. Goods and services are exported when Businesses or companies have a competitive advantage. Products and services that reflect the comparative advantage of a country are also exported. Countries favor exports to imports. The companies in these would want to sell more overseas. Governments of country's around the globe encourage exports because they help in creating new job opportunities, help bring in higher wages, and also in the process raise the standard of living of their residents. Exports can also help increase the foreign exchange reserves of a country. Almost every country around the globe offers financial incentives to exporters. Countries like China have Special Economic Zones where the exporters are not charged any tax whatsoever. Countries also have special banks and insurance agencies that are promoted by the government to facilitate growth of exports.

The fundamental principle driving international trade is the concept or principle of comparative advantage. Some countries have abundance of some natural resources whereas others have different resources to their advantage. For a

country like Saudi Arabia, it has more oil than it could use but they have very few of other resources that can be used for their benefit. It is the export of oil which allow Saudi Arabia to lead a wealthy life. In other words, they export their excess oil and import all the other goods. In the same way, India and China have the highest working populations, so they can export their labour services to other countries. So countries make it a priority to recognize their core competency and focuses on exporting those.

Cochin Port is a major port on the Arabian Sea and is one of the largest ports in India. The port lies on two islands - the Willingdon Island and Vallarpadam, both in the Lake of Kochi towards the Fort Kochi river mouth opening onto the Arabian Sea. The International Container Transhipment Terminal (ICTT), part of the Cochin Port, is also the first transshipment port in India and is governed by the Cochin Port Trust (CoPT). The Port Trust was established in 1926 and has completed 90 years of service.

The concept of containerisation was introduced in the country in the year 1968 in a seminar held in Mumbai (then Bombay). Since then, the Indian Shipping Community, Shipowners and the trade started considering the use of containers. In the early 1970s, the Shipping Corporation of India Limited (SCI) acquired its first semi-container ship. It had three holds designed to carry containers and the other two holds to carry general cargo. Shipping companies like the Scindias and the India Steamship also started following the same path. India Steamship Company also acquired a small cellular container ship.

The country started developing towards containerisation after the year 1978 with Major ports in the country like Bombay (Mumbai), Cochin (Kochi), Madras (Chennai), Haldia/Calcutta (Kolkata) equipping themselves to handle containerships and container boxes. Importers from abroad also started to stipulate in their Letters of Credit (LC's) that the goods should be containerized. The First container was handled at Cochin port in the year 1979 which was carried by a vessel owned by the American Presidential Line (APL – now part of CMA CGM group). The vessel had also then commenced a scheduled service from Bombay which was then followed by many other Shipping companies. The exporters and importers of the country responded positively to this new development and then forced the government to make large investments in the infrastructure for the growth of containerisation in the country.

Cochin port now has a dedicated a terminal (ICTT) to handle container traffic and is operated by DP World Cochin on BOT basis. In container handling, Cochin secured 4th position amongst all Major Ports in the country in 2021 – 2022 by recording the highest ever throughput of 7.36 Lakh TEUs with a growth of 6.65% over 2020-21.

### 1.2 Statement of the Problem

Cochin port is one of the oldest major ports in the country and has been facilitating container traffic since the 1979. The major share of products like sea

food, coir products, tea, spices, coffee etc. are exported through Cochin port. After the commissioning of ICTT Vallarpadam, the Covid-19 pandemic and the major countrywide Lockdown in the year 2020 has been a major factors affecting trade volumes. In May 2018, the government of India relaxed the Cabotage laws and thereby enabled foreign-flagged vessels also to carry coastal cargo in India. So it is in this background that the present study has been conducted.

### 1.3 Scope and Significance

The scope of work for the project is divided into

1) Understanding aspects of containerisation with an overall idea about

- History of containerisation and classification of containers
- Container terminals and equipments
- International Container Terminal Operators
- World Container throughput
- Containerization and Container traffic in India
- Containerisation & Container traffic in Cochin

2) Outbound container traffic analysis which includes

- Review and analysis of outbound container traffic through Cochin port from 2018 – 2022.

- Analysis of top two containerised commodity being exported through Cochin port and the country they were exported to from 2018 – 2022.

## 1.4 Plan of study

1) Introduction –

   This chapter gives a brief about the container traffic in the country along with history, its origins and also major developments in this particular segment. It also gives a short description of the various products that are being exported and imported from the country.

2) Review of Literature and Research Design -

   This chapter shows relevant points taken from different literatures like articles, books, working papers, websites, newspapers articles etc. The research design shows with the objectives of the study, the methodology used, concepts and also the operational definitions that are used.

3) Profile of the study area –

This gives the profile of the products handled by Cochin Port Trust and the review of the statistical values and shows the quantity of each particular cargo handled by the port during the years from 2018-2022.

4) Conclusions and Policy Suggestions-

This shows the Conclusions and derived from the data analysis and also the suggestions based on the conclusions.

# CHAPTER 2

# THEORETICAL REVIEW AND RESEARCH DESIGN

## 2.1 Introduction to containerisation and container traffic

Containerization is the process of loading or stuffing of cargo into Steel Intermodal containers for the purpose of transportation. It can be defined as a system of freight transport based on a range of steel intermodal containers which are also known as shipping containers, ISO containers etc. Containers are built to standardised dimensions, and can be loaded, unloaded, stacked, transported efficiently over long distances, and transferred from one mode of transport to another container ships, rail and semi-trailer trucks without being opened. The system, developed after World War II, led to greatly reduced transport costs, and supported a vast increase in international trade. Containerization is a method of distributing merchandise in a unitized form thereby permitting an intermodal transport system to be developed providing a possible combination of rail, road, canal and maritime transport. The system is long established and was in being at the turn of the century in a somewhat less sophisticated form. It came more into use in the North American coastal trade in the 1930s when the vessels were called Van ships. Today we have seen the evolution of the sixth generation of container ships as the benefits of containerization become more attractive on a worldwide scale, thereby aiding rising living standards and facilitating trade expansion.

### 2.1.1 History

Containerisation has its origins in early coal mining regions in England from the late 18th century on. In 1795, Benjamin Outram opened the Little Eaton Gangway upon which coal was carried in wagons built at his Butterley Ironworks. The horse drawn wheeled wagons on the Gangway took the form of containers, which, loaded with coal, could be transhipped from canal barges on the Derby Canal which Outram had also promoted.

By the 1830s, railroads across several continents started carrying containers that could be transferred to other modes of transport. The Liverpool and Manchester Railway in the United Kingdom was an example of this. These rectangular timber boxes, four to a wagon, were used to move coal from the Lancashire collieries to Liverpool, where they were then transferred to horse drawn carts by using cranes. These were originally used for moving coal on and off barges but later on these boxes were used to containerize coal, at places like the Bridgewater Canal from the late 1780s. By the year1840s, iron boxes as well as wooden ones were in use. The adoption of closed container boxes designed for movement between road and rail were from the early 1900s.

In the United Kingdom, several railway companies started using these similar containers by the beginning of the 20th century and in the 1920s the Railway Clearing House standardised the RCH container. These were five or ten foot long,

wooden and non-stackable. These early standard containers were a great success, but the standard remained UK-specific.

From the years 1926 to 1947 in the US, the Chicago North Shore and Milwaukee Railway carried motor carrier vehicles and vehicles loaded on flatcars between Milwaukee, Wisconsin, Chicago and Illinois. In the Beginning of 1929, Seatrain Lines carried railroad boxcars on its sea vessels to transport goods between New York and Cuba. In the mid of 1930s, the Chicago Great Western Railway and then New Haven Railroad began the piggy-back service of transporting highway freight trailers on flatcars limited to their own railroads. The CB&Q, the Chicago and Eastern Illinois and the Southern Pacific railroads had joined the innovation by 1953. Most cars were surplus flatcars equipped with new decks.

During the World War II, the Australian Army used containers to help overcome the various breaks of gauge. These non-stackable containers were about the size of the later 20 foot ISO container made mainly of wood.

In the year 1955, former trucking company owner Malcom McLean worked with engineer Keith Tantlinger to develop the modern intermodal container. The challenge was to design a shipping container that could efficiently be loaded onto ships and that could be held securely on long sea voyages. The result was an 8 feet or 2.4 m tall by 8 feet or 2.4 m wide box in 10 feet or 3.0 m long units

constructed from 2.5 mm or 0.098 inch thick corrugated steel. The design also incorporated a twistlock mechanism atop each of the four corners which allows the container to be easily secured and lifted using cranes. After helping McLean make the successful design, Tantlinger convinced him to give the patented designs to the industry and this began the international standardization of shipping containers.

Then towards the end of World War II, the United States Army used specialized containers to speed the loading and unloading of transport ships. The army used the term “transporters” so as to identify the containers, for shipping household goods of the officers in the field. The “transporter” was a reusable container, 8.5 feet or 2.6 m long, 6.25 feet or 1.91 m wide, and 6.83 feet or 2.08 m high, made of rigid steel with a carrying capacity of 9,000 pounds. During the Korean War the transporter was used for handling sensitive military equipment which proved effective and was approved for broader use. The theft of material, damage to the wooden crates, and the prolonged handling time by longshoremen at the Port of Busan, made the Army realise that steel containers were needed. In 1952, the army began using the term “CONEX” which was short for "Container Express". The first major shipment of CONEXes was in late 1952. It contained engineering supplies and spare parts. It was sent by rail from the Columbus General Depot in Georgia to the Port of San Francisco and from there by ship to Yokohama, Japan, and then to Korea. The shipment time was also seen to be almost halved. By the

time of the Vietnam War, the majority of supplies and materials were shipped with the CONEX. After the U.S. Department of Defence standardized the 8'x8' cross section container which was in multiples of 10' lengths for military use, it was rapidly adopted for shipping purposes as well.

These standards were adopted in the United Kingdom for containers, and these largely displaced wooden containers in the 1950s. The railways of the USSR had their own small containers.

### 2.1.2 Containers

The container is an equipment used to store and carry goods. In shipping, which is a service of transportation of seaborne goods, container in its early stages was used to refer to any type of box used to carry cargo. Today, a container is also known as "box" or "van" in many countries, particularly in the USA. The International Organisation for Standardisation (ISO) defines a freight container as “An article of Transport equipment (a) of permanent character and accordingly strong enough to be suitable for repeated use (b) specially designed to facilitate the carriage of goods by one or more modes of transport, without intermediate reloading (c) fitted with devices permitting its ready handling, particularly its transfer from one mode of transport to another; (d) so designed as to be easy to fill and empty (e) having an internal volume of 1 cu.m or 35.3 cu.ft. or more.

The general purpose freight container is defined as a "A freight container of rectangular shape, weatherproof, for transporting and storing a number of unit loads, packages or bulk material which confines and protects the contents from loss or damage, that can be separated from the means of transport, handled as a unit load and transhipped without rehandling the contents".

### 2.1.3 Containerized Cargo

The use of intermodal containers for the transport of a great variety of cargo has become very common today. Intermodalism is a concept that embraces the movement and transfer of standardized cargo containers by sea, air and surface. This has to a great extent, reduced the multiple handling of cargo. The development of specialized containers with a wide range of types, sizes and configurations has enabled containerization of most cargo. The on time and the undamaged arrival of the complete shipment at the destination is the primary objective of the shipper. In containerized transport, the shipper can reduce the possibilities of losses by selecting the proper container service, selecting the right type of container and inspecting the container to ensure proper accommodation and protection of goods. The Shipper will also need to ensure proper packaging of goods to withstand the hazards of the transportation process. Goods should also be properly stowed and secured the container.

The container contents properly described and documented, and the container should be locked, sealed and the container and seal numbers should be recorded on all shipping documents. Timely unloading at destination should also be ensured to enable an efficient containerised transportation of goods.

### 2.1.4 Container Services

**Port-to-Port service -** When the volume of cargo does not provide for a full container load, ie. Less than container load or LCL or when the shipper/exporter or consignee does not have the facilities to load or un-load the containerized cargo at his premises, they can utilize the services of forwarders, consolidators or the carrier/line to stow or stuff the goods in containers at the port of departure. But this service does not realise the full benefit of containers as the cargo is not in a container for the entire journey and so it is subject to a certain degree of exposure to weather, handling and stowage damage and also theft or pilferage same as that of the break-bulk cargo. Maximum export packing standards are required when shipping port-to-port.

**Door-to-Door** - The greatest benefit of Containerization is realized when the shipper uses the container to carry goods directly from his or her premises to his or her customer's location. Perhaps the only time the container will be opened while enroute is for Customs inspection. Reduced susceptibility to pilferage and theft, elimination of multiple handling of individual items of cargo and the least

possible exposure to the elements are all attractive features of Door to-Door service. In utilizing this type of service, the shipper accepts the additional responsibility of ensuring that cargo is properly stowed and secured in the container, precluding damage to the cargo, container or transport vehicle. Reduction of packing protection must still be carefully evaluated and implemented only after due consideration of the hazards of ocean transport, including the lifting force at transshipment points.

Door-to-Port Combinations of Door-to-Door and Port-to-Port service are possible, depending on the needs of the exporter and the facilities available. While these combinations are more advantageous than Port-to-Port service, the cargo will still be exposed to the hazards of theft, weather and additional handling during part of the transportation process.

### 2.1.5 Classification of Containers

- Classification on the basis what a container is made of

The majority of containers are made of steel, aluminum or Glass Fiber reinforced plywood or GRP. Almost more than 65% of the entire container fleet presently consist of steel containers.

The main advantages of steel containers is that they are the cheapest. They can also be more easily repaired compared to aluminum or GRP containers as there

is more availability of skilled laborers and equipments to handle steel. In the USA the aluminum containers can be more easily repaired compared to steel containers. They can also resist damage like when a damage can create a hole in an aluminum container, it can cause only a dent in a steel container and the same may not require an immediate repair.

The disadvantages of steel containers include problems like they can have an economic life of about only10 years, while aluminum or GRP containers could last longer. They will also have more tare weight compared to other types of container and so will be able to carry less payload of cargo compare to others. They are also more prone to corrosion, but this can be overcome by us of alloy steel instead of ordinary steel.

- Classification on the basis of dimension

The International Organization for Standardization has to standardize container dimensions, have provided with the recommendations as to the length of container being multiples of 10ft. i.e., 10ft or 20ft. or 30ft. Currently, 20ft. and 40ft. containers are predominantly used. 20ft. containers are referred to as Twenty Feet Equivalent Unit or TEU. This term is used all over the world to express the container size. A 40 ft. is equivalent to two 20 fts. All the containers being expressed in terms of TEU, makes it easier for the container terminal operators

and ship-owners to estimate the space required in a container terminal or inside the vessel to cater to the total number of boxes expressed in terms of TEUS, being handled at a certain port or by a carrier.

Most of the containers have a width of 8ft. But in height containers vary from 8ft. to 8 1/2ft. About 75% of world box fleet have a height of 8 1/2ft. and about 20% have a height of 8ft, which can be also referred to as Standard Containers. However, there is an increasing tendency to use containers of 9ft, and 9 1/2ft, which can be also referred to as High Cube containers. The inside volume of a standard 20ft. X 8ft, X 8 1/2ft. container is about 30 cu.m.

- Classification on the basis of use

Containers classified into three types by cargo to be used for as follows

**i. General cargo container**

This is for general cargo that does not require temperature control. It occupies an overwhelming percentage of the total number of containers and is called “Dry Cargo Container”. It is generally of the closed type with a door at one end.

**ii. Thermal containers**

These are used for cargo that requires refrigerated or insulated storage, covered overall with material of low heat transfer such as polystyrene foam. It is classified into three types:

a) Refrigerated (or Reefer) Container for commodities like cooled foodstuffs, meat, fish, vegetables, etc.

b) Insulated container for fruit, vegetables, etc. Dry ice is used in these as a cooling medium.

e) Ventilated container which allows for the passage of air by means of apertures on sides or ends. These are used for cargo that requires respiration such as fruit or vegetable.

f) Special containers like Bulk container, Tank container, Open top container, Side open container, Car container, Pen container of Livestock container, etc.

The General Cargo Containers or dry cargo containers, which are by far used the most, are also of different types. A standard dry cargo container is a container of box type with a door at one end. Some containers are provided with side doors, i.e. the entire side of the container can be opened for easier stuffing and destuffing.

There are various dry container specials like open top container, flat racks,

Open top containers to transport heavy machineries, bulk container, garment containers, ventilated containers, etc. Flat rack or flat container is a container having its base only. Usually a cargo of odd size and weight is put on to this container and is lashed to it. Garment containers are fitted with hangers which helps a garment dealer to stuff a large number of garments in hangers inside the containers. The ventilated containers are containers having some means of ventilation required for carriage of special cargo like tea, coffee, etc. These cargoes are liable to sweat if carried in closed box type containers. Liquid containers are usually made of stainless steel and have manholes for loading and unloading liquid cargo whereas gas containers are special containers used to carry gas.

- Markings and Numbers for Identification of Containers:

  Containers show the following:

  i) Owner Code, Serial Number and Check Digit.

  ii) Country Code and type code.

  iii) Maximum, Gross and Tare Weight

### 2.1.6 Advantages of Containerisation

- For ship-operators

  a) Reduction in port time of ships.

b) Improved working ratio of ships.

- For Exporters/Importers

a) Reduction in packaging cost like for example, goods can be placed in Containers packed in cartons instead of in cases

b) Reduction of damage, pilferage and theft

c) Reduction in marine insurance premium:

d) Greater protection of fragile and easily contaminable cargoes

e) Reduction in inland transport costs

f) Retention of original quality of goods

g) Faster and reliable delivery;

h) Physical separation of 'dirty' cargoes,

i) Simplification of documentary procedures;

j) Less inventory costs as a result of less transit time; and

k) Stable inventory control made possible by stabilized ships operation Schedule.

**Concept of FCL and LCL:**

FCL is short for Full Container Load. In this, container consists of cargoes meant for one party, i.e. one consignee only. The cargo is stuffed at shipper's warehouse or at the CFS and is destuffed at consignee's warehouse or CFS. Here the responsibility of stuffing, stowing of cargo inside the container is on the

shipper. Stuffing charges will be on account of the shipper and the destuffing charges will be on account of the consignee.

LCL is short for Less than Container Load. Here, a container consists of cargoes meant for different parties. The carrier collects cargoes from various shippers and stuff all of them into a container at the port or CFS. At destination, the carrier's agents destuff the cargoes from the container and delivers the cargoes to respective consignees.

FCL/LCL - A shipment of goods which the merchant is responsible for packing into the container and the carrier is responsible for unpacking the container.

LCL/FCL - A shipment of goods which the carrier is responsible for packing into the container and the merchant is responsible for unpacking out of the container.

### 2.1.7 Container Terminal and Equipment

**A Container terminal is a** facility that specializes in the transshipment, handling, and temporary storage of containers that is between at least two transportation modes. Container terminals are located strategically as critical points of as part of a complex logistic network. A model container terminal may usually be divided into the following areas:

The Ships Area: This includes a quay line where the container vessels are breathed. These terminals are also provided with gantries which are heavy cranes that are required to handle containers. These gantries are mounted on rails and are known Rail Mounted Quay Cranes (RMQC). These can move to and from along the entire length of the container vessels. These gantries are also fitted with automatic spreaders for faster handling of containers.

Marshalling Yards: The rear portion of the ship's area is known as marshalling yard and is used to prestack a limited number of export containers as buffer stock for loading and also to prestack a limited number of import containers after being discharged from vessels and prior to their removal to container yard (CY).

Stacking Yard or Container Yard (CY): This is the area where the import containers are transferred from marshalling yard and are stored until they are taken to for clearance to container freight stations, Inland Container Depots and then to Consignee's warehouses, etc. Similarly, this is also same the area where export containers are brought from shipper’s warehouse, ICD, CFS, etc. prior to being moved to marshalling yard quay line for being loaded on board to a vessel. This Container yard is also used to stack empty containers. In a container Terminal, usually the yard is divided into various subdivisions meant

for stacking empty containers, export containers, import containers and a separate yard is also for separate shipowners in some terminals.

The Equipments in a Container Terminal include the following

- The **forklift** is the most basic piece of intermodal equipment but has limitations and can handle only loaded 20-foot containers or empty containers of other dimensions.

- The **holstler truck** is designed to move containers loaded on **chassis** or **bomb carts** within terminals.

- The **straddle carrier** is a flexible piece of equipment that can be used for all intermodal operations such as loading/loading railcars and trucks and stacking containers up to three in height.
- The **front-end loader** is a more restricted piece of equipment that can reach stacks of up to three full containers and can be used for double-stack intermodal rail operations.
- The **reach stacker** which is also known as a side loader is a flexible piece of truck equipment performing intermodal operations for rail and trucks as well as the stacking of containers.

- The **rubber-tired gantry** (RTG) is a fixed intermodal piece of equipment that is used for loading and unloading railcars from trucks in high-density terminals as it can span over up to four rail tracks or six containers.
- The **rail-mounted gantry** (RMG) is a fixed piece of intermodal equipment that is widespan and can be used for intermodal operations over six to ten rail tracks, or 8 to 12 containers.
- The **portainer** or **ship-to-shore crane** (STS) is a gantry crane strictly used to load and unload containerships and comes in different sizes based upon the ship class they can accommodate. These Portainers are equipped with spreaders that have twist locks on each corner to secure the container during hoisting.

## 2.2 International Container Terminal Operators

The Container Terminal operations are dominated by a few players around the world. The International rankings and positions of Container Terminal Operators continually change based on various maritime as well as economic parameters. For the past several years, the top spot has regularly been alternated between COSCO (China), PSA International (Singapore), and Hutchison Holdings (China). The Dubai Ports World (DPW), who is also the Terminal Operator of ICTT, Vallarpadam, Kochi, is a new player in this field

but has quickly risen to the third-ranking in the international list due to its several acquisitions and its large trade volume.

The top 11 container terminal operators as of December 2021 are the Following:

1. **PSA International, Singapore**

   Founded in the year 1964, PSA International is based out of Singapore and is a global leader in terminal operations. It has major container hubs spread across the globe through the operations of two nodal centres- PSA Singapore and PSA Antwerp. PSA owns over 25 ports across Asia, the Middle East, and Europe. It also has investments in ports in countries such as Belgium India, Italy, Netherlands, Japan, and Panama.

2. **Hutchison Port Holdings (HPH),** *Hong Kong, People's Republic of China*

   HPH is based and managed out of Hong Kong, China. It currently operates nearly 300 berths across several important ports around the world. It is a subsidiary under the CK Hutchison Holdings group and has operations in 48 various ports. Their terminals are spread across major shipping routes including Asia, Europe, Africa, the Middle East, and the Americas. PSA International has a minority 20% stake in HPH.

3. **Dubai Ports World (DPW*),*** *Dubai, United Arab Emirates*

   **DPW** terminals handle and process nearly 10% of all global container trade and is a major player in Asia, Europe, and the Americas. It operates over 40 terminals across 22 nations and operates through 2 home terminals- the Port of Jebel Ali and Port Rashid. It has grown in size since inception owing to aggressive mergers and acquisitions including CSX World Terminals and P&O Terminals.

4. **AP Moller Terminals,** *The Hague, Netherlands*

   AP Moller Terminals are owned by the Maersk Group and it operates out of the Netherlands. It operates 74 ports in 58 countries. With several projects currently ongoing, APM is a leader in port operations. It provides services to over 60 lines and has several port interests in the US under the SeaLand M&A.

5. **China Ocean Shipping Company (COSCO)**, *Beijing, People's Republic of China*

It is operated under the COSCO Group as COSCO Shipping Ports Ltd. It also has operations out of Hong Kong, Shanghai, Shenzhen, Singapore, and Japan that caters to shipping in their respective regions. The company also deals in shipbuilding, repair, maintenance, freight Handling, and other auxiliary services.

6. **China Merchants Port Holdings Company**, *People's Republic of China*

The China Merchants Ports is a major terminal operator and shipping firm that has its headquarters in Hong Kong, China. It operates from the ports of Qingdao, Tianjin, Shanghai, Ningbo Zhoushan, and Shenzhen. This company makes it to our top terminals list due to the large stake it has in the Chinese port sector and also due to the large trade volume that passes through it on a daily basis.

7. **Terminal Investment Limited (TIL),** *Geneva, Switzerland*

The TIL currently has 37 operating terminals and a further 2 in development. TIL primarily services ships owned and operated by the Mediterranean Shipping Company (MSC). It operates in several

transhipment hubs in the Middle East, Europe, Asia, Africa, and the Americas.

8. **International Container Terminal Services Inc. (ICTSI),** *Manila, Philippines*

   ICTSI is a port management firm based out of the Philippines and has bases in 18 different countries and operates 18 terminals in Europe, the Americas, the Middle East, Africa, and the Asia Pacific regions.

9. **Eurogate Container Terminal Ltd.** *Bremen, Germany*

   Eurogate works out of Bremen, Germany. It is majorly a European terminal operator. It has terminals in Bremen, Hamburg, Limassol, Salerno, and Lisbon in addition to another four European terminals. Outside Europe, it has only a single base in Tangier, Morocco.

10. **Evergreen Marine Corporation (EMC),** *Taoyuan City, Taiwan*

    EMC has operations in several countries through its shipping and terminal divisions, including in Taiwan (Uniglory Marine), Evergreen UK (UK), and Italia Marittima (Italy) that jointly operate. It operates two main classes of terminals- transhipment hubs, and other container hubs. Two

transhipment hubs in Taiwan, namely Taichung and Kaohsiung Container Terminals. They operate another facility called the Colon Container Terminal based in Panama. In the US, EMC is based in California (Evergreen Los Angeles Terminal and Oakland Evergreen Terminal), and Washington (Tacoma Evergreen Pierce County Container Terminal). There are several major container terminals in Asia (Thailand, Taiwan), Europe (Italy, UK), and the Middle East.

**11. SSA Marine,** *Washington, United States*

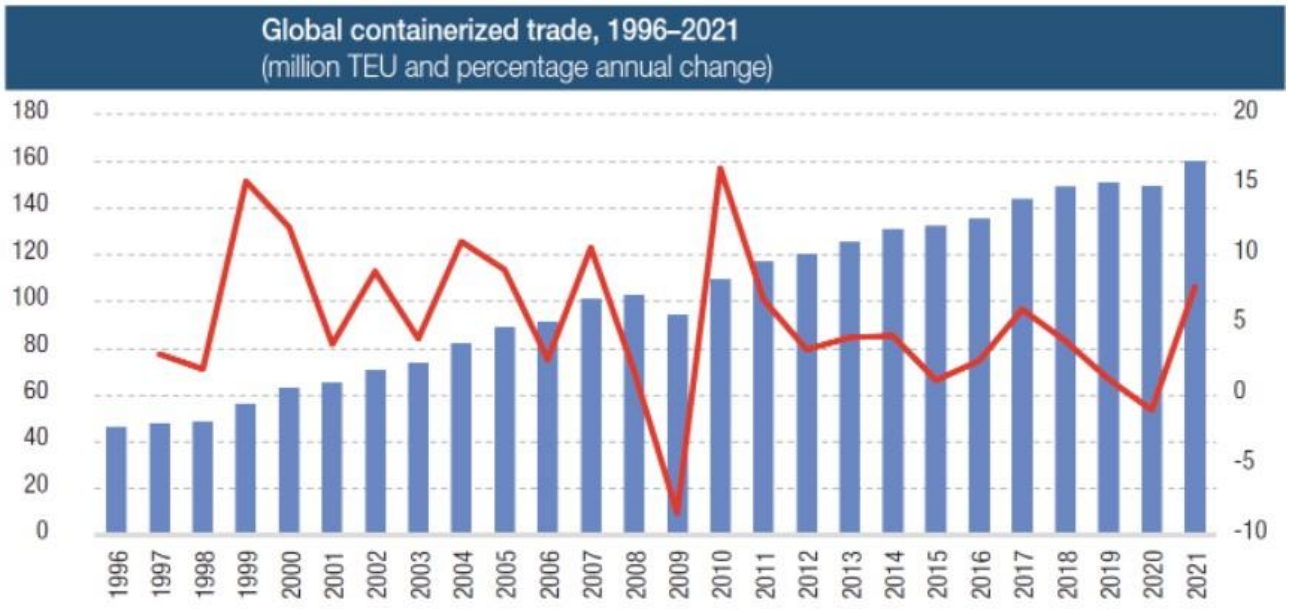
SSA Marine is an American terminal operator and has operations across five continents and services 250 various locations. Outside the US, it has interests and operations in Mexico, Panama, and Chile. It has also made initial investments into the South East Asian region.

## 2.3 World Container Trade in 2021

As per UNCTAD, the value of global trade reached a record level of $28.5 trillion in 2021 which is an increase of 25% on 2020 and about 13% higher compared to 2019 ie. before the COVID-19 pandemic started. After a slow third quarter, trade growth picked up again in the fourth quarter. The trade in goods increased by almost $200 billion which led to achieving a new record of $5.8

trillion. The trade in services rose by $50 billion to reach $1.6 trillion which is almost just above pre-pandemic levels. The report shows that in the fourth quarter of 2021, all major trading economies saw imports and exports rise well above their pre-pandemic levels of 2019. The trade in goods was seen to increase more strongly in the developing world than in the developed countries. In the year 2020, the global container trade fell by about 1.1% to 149 million twenty-foot equivalent units (TEU) which was comparatively a better outcome when compared to the 8.4% plunge in 2009 following the then financial crisis. But it was seen that the container volumes bounced back quickly when the consumer demand increased which was boosted by stimulus packages and measures to support incomes during COVID-19 by different governments.

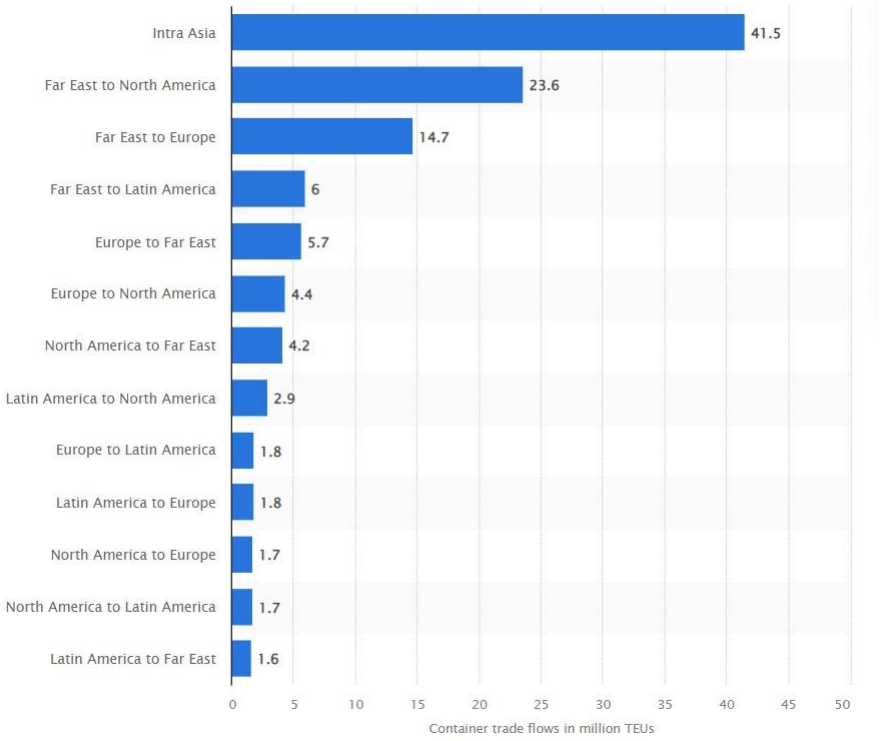
Global Containerized Trade, 1996 - 2021




*Source: UNCTAD secretariat calculations, based on MDS Transmodal, World Cargo Database, June 2021*

This bounce back in the year 2021 brought along with it a shift in consumption patterns which seemed to move away from services and more towards goods. This was especially seen with online purchases along with health products and pharmaceuticals to take on COVID-19 and also with home office equipment as the work from home program increased. This surge had resulted in several logistical bottlenecks globally and in 2021, the whole industry saw shortages in containers, transport equipments like chassis and also space on container ships. This added to severe port congestion across several ports across the globe and it reduced service levels and also carrier reliability when at the same time the industry saw exponentially increasing freight rates and surcharges.

Global container trade in 2021, by trade lane (in million TEUs)




*Source: statistica.com*

The Container trade flows within Asia reached an estimated volume of 41.5 million TEUs in the year 2021. Trade flows from the Far East to the North America and the Europe was about 23.6 million TEUs and 14.7 million TEUs in the year 2021, respectively.

### 2.3.1 Global Container shipping line Alliances and profits

The Global container shipping alliances seems to be going strong with the 3 main alliances – 2M, Ocean Alliance and The Alliance which jointly controls 84.60% of the container market thereby leaving 15.40% to the other lines. These alliances include the 9 out of the top 10 container shipping lines in the world. Wan Hai Lines and Zim are the only container line outside of the top 10 to be part of these alliances. In terms of the Top container shipping lines in the world, MSC overtook Maersk Line with a fleet which can now carry 4.3 million standard 20-foot containers which is about 2,000 more than Maersk. MSC and Maersk now each have a market share of 17% in container shipping which is ahead of CMA CGM, COSCO, and Hapag-Lloyd.

## 2.4 Containerisation in India 2021

India is a major hub of maritime trade and is the 16th largest maritime country. It ranks 18th in terms of global shipping tonnage. As per the Annual Report

2021 of the Ministry of Ports, Shipping and Waterways, Mundra Port, Gujarat handled 5.7 million TEU (twenty-foot equivalent unit) of cargo in 2020-21. It has six berths serve containerised cargo, 10 berths dedicated to dry bulk and three to liquid bulk. It handled a Total cargo of 144.4 MT (million tonnes) in 2020-21. Mundra Port accounts 24 percent of the country's port capacity. The Jawaharlal Nehru Port (Nhava Sheva), Maharashtra has five fully automated container terminals that handles 55 percent of India's container traffic. In 2020-21, containerised cargo accounted for 89 percent of the Nhava Sheva port's total cargo. It handled 4.7 million TEU (twenty-foot equivalent unit) of cargo in 2020-21. It serves cargo originating from or bound for the states of Maharashtra, Gujarat, Karnataka, and Madhya Pradesh and it has a customs house and connectivity to 50 inland container depots (ICDs) and 30 container freight stations (CFSs). As per the Conatiners India Survey Report by Maritime Gateway and Drewry 2021, the Industry in the country faced an unavailability of boxes which attributed to the rise of transportation cost which hit shippers in the country hard and were forced to pay a premium price. Slot availability on vessels were a major challenge as the availability was not ensured by Shipping Lines even after paying a premium due to the supply chain disruptions.

## 2.5 TAMP and Major Port Authorities Act 2021

The Tariff Authority for Major Ports (TAMP) was constituted in April 1997 to provide for an independent Authority to regulate all tariffs including both vessel related and cargo, and also rates for lease of properties in respect of Major Port Trusts and the private operators located therein. The Major Ports Trust Act, 1963 was amended by Port Laws (Amendment) Act 1997 to constitute the TAMP. As per the Press Information Bureau and Ministry of Shipping, the erstwhile Tariff Authority for Major Ports (TAMP) was abolished in the country with the introduction of the Major Port Authority Act, 2021 with effect 3.11.2021. The Tariff Guidelines, 2021 for the PPP projects in Major Ports allow for the concessionaires at Major Ports to set tariffs as per market dynamics. At present, the Major Port's PPP concessionaires handle around 50% of the total traffic handled by all the Major Ports in the country. The biggest benefit of transition to market linked tariff would be that a level playing field would be provided to the PPP concessionaires at Major Ports to compete with private ports in the country. Till the introduction of the Act, PPP concessionaires at Major Ports were constrained to operate under the stipulations of the guidelines by TAMP whereas the Private operators or the PPP concessionaires at non-major ports were free or were allowed to charge tariff as per market conditions.

Major port authorities act, 2021 is an Act to provide for regulation, operation and planning of Major Ports in India and also to vest the administration, control

and management of such ports upon the Boards of Major Port Authorities and for matters connected therewith or incidental thereto.

## 2.6 Containerisation in Cochin in 2021

The first container was handled at Cochin port in the year 1979 carried by vessel owned by American Presidential Line (APL) which also commenced a scheduled service from Bombay which was followed by several other companies. The International Container Transshipment Terminal at Vallarpadam, part of Cochin Port, was developed with a vision to boost India's container transshipment and checking rising outflow of transshipment containers to Colombo. Despite having a dedicated road and rail connectivity with a 14.5 m draft, the terminal had operated at an average 50% usage of the total container handling capacity. In container handling, the Cochin port Trust secured fourth position among all major ports in the country by recording highest ever throughput of 7.36 lakh TEUs which was higher by 6.65% from 2020 -21. The Cochin port also handled its highest ever transshipment container traffic of 1.56 Lakh TEUs at ICTT, Vallarpadam in 2021 -2022.

## 2.7 Global Trade and Factors that influenced it during 2018 -19 to 2021-22

International trade patterns have been characterized first by anaemic growth (2012-2014), then by a downturn (2015 and 2016) and finally by a strong rebound

(2017 and 2018). The anaemic growth period was a continuing result from the great recession of 2009. The downturn (2015 and 2016) was largely the result of several factors including declining commodity prices, weak demand in major economies and United States dollar appreciation. The trade rebound of 2017 and 2018 was due to several factors, which primarily included the upward trend in commodity prices that played an important role (oil prices recovered strongly during 2017 and the half of 2018). Another factor that contributed to the increase in value of international trade was the depreciation of United States dollar depreciated by about 10 per cent throughout 2017 which drove up the value of international trade. The rebound was unanticipated as there was an increasing global uncertainty at the time. The trade war between the United States and China led to global trade repercussions which brought the trade value growth again into negative territory in 2019 even when the GDP growth remained positive. The economic conditions started deteriorating in the second half of 2018 and further in 2019 with the trade tensions between the United States and China which started in the first half of 2018 and also there existed fears of a disorderly Brexit in Europe. There were also a slowdown in industrial production, manufacturing of new orders and also low business confidence which all pointed to an increased risks of a global recession. There was a loss of momentum since the second half of 2018 and there was a trade downturn in 2019. As per UNCTAD, China, European Union and the United States showed growth rates predominantly into the negative territory around the end 2018.

The major disruption during this period was the COVID-19 pandemic. The COVID-19 pandemic of 2020 severely disrupted the world economy. Worldwide merchandise trade flows decreased significantly in 2020, as Covid-19 disrupted economic activity across the globe. The year was marked by some of the largest reductions in trade and output volumes since WWII. A per the London School of Economics and Political Science, the declines in both world industrial production and goods trade in the first half of 2020 were of similar depth to those at the trough of the Global Financial Crisis (GFC). COVID-19 has had an immediate and strong impact on international trade. The first signs of the trade downturn were seen in January, where most of the major economies recorded negative trends. According to UNCTAD, the sharpest drop in international trade occurred in the second quarter of 2020, with global merchandise trade falling by more than 20 per cent relative to the same quarter of 2019. However, situations changed and more quickly, it marked a more of a V- shaped recovery in 2020. Trade trends for the third quarter, even though negative on a year-over-year basis, was significantly better than during the second quarter. Global trade turned out to recover from the shock at an extraordinarily fast pace from around mid-2020.

In the Year 2021, a major disruption to International Trade was that of the Suez Canal Blockage by the vessel Ever –Given, which is 400m-long (1,312ft) and weighs 200,000 tonnes, with a maximum capacity of 20,000 containers. It was currently carrying 18,300 containers, when it got wedged in the Suez Canal. As per BBC, about 12% of global trade pass through the canal each day. According

to Moody's, prior to the pandemic, trade passing through the Suez Canal contributed to 2% of Egypt's GDP.

## 2.8 Literature Review

**Nimgaonkar, Girija Arvind (October 2008)** in her Ph.D. thesis titled, "Export Led Economic Growth and India". University of Pune concluded that in the changing environment the role assigned to exports in Indian economy start a change from a mere "foreign exchange earner" to "exports as a Catalyst in the growth process". The comparative analysis of India Vis-a-Via the "Asian tigers" does not provide us an idea about the specific policy instruments that can be used for export led growth. The analysis gives us an idea about the way these economies maintained the environment for boosting the manufacturing export growth as well as certain macroeconomic variables such as exchange rates, price level etc., to attain high growth through export growth. India needs to use these insights in ways appropriate to her own circumstance.

**Marc Levinson, 2008,** "The Box – How the Shipping Container Made the World Smaller and the World Economy Bigger (Princeton: Princeton University Press)" showed how containerisation began and how it started changing the Shipping Industry to pave way for it to reach where it is now. It recounts how the drive and imagination of an entrepreneur, Malcom McLean, turned containerization from

an impractical idea into a massive industry that slashed the cost of transporting goods around the world and made the boom in global trade possible. By making shipping cheap, industries could locate factories far from its customers, the container paved the way for Asia to become the world's workshop and brought consumers a previously unimaginable variety of low-cost products from around the globe.

**Mathur, B.P. (1985)** in his research work titled, "Industrial Exports and Developing Countries - India's Search for countervailing power" found that an obvious solution of growth for India is to move into the fields of industrial exports, his area of focus was on proper segmentation of International Market, use of joint strategy to enter into foreign market and creation of “institutional agencies” in shape of aid and credit corporation and corporation for promoting joint ventures.

**Prasad et.al (2014):** The study suggested various general and specific policy measures like, export infrastructure, market diversification, export promotion schemes and formation of Regional Trading Agreements, etc. to compete in global emerging trade scenario by analysing the current trade scenario in global as well as in Indian trade.

**Mukherjee, S. and Mukherjee, S. (2012):** Examined the performance of exports and other associated factors affecting exports in India; the manufactured exports contribute a major share of total exports of the country and identified the

increasing importance of exports in the economic growth of the country.

**Paudel, R.C. (2014):** Analyzed the impact of liberalization on exports of India using ARDL approach for the period 1975-2008 and found that export supply is affected by domestic output whereas export demand is influenced by the world demand. The study established a favorable impact of liberalization reforms on manufacturing exports of India.

**Veermani, C. (2012):** Analyzed the post-reform growth and pattern of India's Merchandise exports. It is established through the study that export growth rate (8 per cent) in the first decade after reforms was low as compared to that of second-decade growth rate (21 per cent). A major shift was found to be present in India's export destination from traditional developed countries to emerging markets.

**Goyal, S. (2016):** Highlighted the importance of exports as they help in the economic growth of the country by contributing in foreign exchange reserves. The study examined the trends prevailing in exports of India established that despite of US subprime crisis, merchandised exports of India showed a remarkable growth rate of 15.79 per cent for a period of 10 years (2004-05 to 2013-14)

## 2.9 The Research Design

### 2.9.1 Objective of the Study

The key objective of the study is to conduct an analysis on the outbound container traffic through Cochin port. The other objectives included:

- To identify trend of outbound container traffic in Cochin port during the period 2018 - 2022

- To make out the pattern of country wise outbound container traffic in Cochin port during the period 2018 -2022

- To understand the volume of outbound Container movement through Cochin port after the Onset of Covid-19 pandemic

- To identify the top three outbound containerised commodities and countries they are exported to during the period 2018-2022

### 2.9.2 Methodology of the Study

Data used for the project are secondary data, collected from different sources such as Cochin Chamber Of Commerce (CCC), Cochin Port Trust

### 2.9.3 Tools and Techniques used

Different statistical tools like Average, percentage, graphs, pie charts etc. has been used for analysing the secondary data collected.

### 2.9.4 Limitations of the Study

The Limitations of the Study Include:

- The study depends on secondary data, which are the aggregates of the periodic data that could have led to the aggregation error.

- Since the data are taken from various sources, there is a possibility of data variation.

- The study considered only four years of data for a period from 2018 - 19 to 2021 - 22, due to time constraint.

# CHAPTER III

# PROFILE OF STUDY

# OUTBOUND CONTAINER TRAFFIC

## 3.1 Introduction to the chapter

In this chapter an analysis of outbound container traffic is made on the basis of last five years (2018- 19 to 2021-22) information and data. The year 2020 saw the onset of Covid-19. Analysis is done on three categories.

1. Outbound container traffic
2. Top Three outbound commodity and the countries they are exported to

## 3.2 Outbound Container Traffic Analysis

The year 2020 saw the serious onset of the COVID-19 pandemic and then the year 2021 was the year that saw the after-effects and side-effects of the pandemic. The year 2021 saw widespread disruptions in the industry globally by serious port congestions which were caused by a combination of the impact of COVID-19 pandemic, port inefficiencies, an increased trade demand disruptive blockage of the Suez Canal, extreme rate hikes on all trades, high container dwell times inside ports both on exports and imports, increased blank sailings, record volumes of containers handled at various ports around the world, shortage of

ships and containers due to these two vital assets being held up elsewhere than where it is required and also due to a general confusion with no one having a clear visibility of what was happening in the trade.

**Overview of movement in terms of TEUs from 2018 -19 to 2021-22**

| Year | 20' | 40' | TEUS | QTY.(KGS) |
|---|---|---|---|---|
| **2018- 2019** | 31795 | 44406 | 120607 | 1218150996 |
| **2019 -2020** | 32884 | 44128 | 121140 | 1239904415 |
| **2020 -2021** | 32986 | 45266 | 123518 | 1295169728 |
| **2021 – 2022** | 34255 | 51304 | 136863 | 1454437886 |

*Source: Statistics, Cochin Chamber of Commerce & Industry*

The above table shows the Number of containers in TEUs and Quantity in Kgs exported through Cochin port from 2018 -19 to 2021 -22. In the Year 2018 – 19 a total of 1, 20, 607 TEUs were exported through Cochin which included 3,175 20- foots and 44,406 40 - foot containers. A total of 1218150996 Kgs was exported through Cochin Port in the period of 2018 –19. In the Year 2019 – 2020, a total of 1, 21,140 TEUs were exported through Cochin port which included 32,884 20-foot containers and 44,128 40-foot containers. A total of 1239904415 Kgs was exported through Cochin Port in the period of 2019 –20. In the year 2020 – 21, a total of 1, 23,518 TEUs were exported through Cochin port, which included 32,986 20- foot containers and 45,266 40-foot containers. A total of

1295169728 Kgs was exported through Cochin Port in the period of 2020 –21. In the Year 2021 – 22, a total of 1, 20,607 TEUs were exported through Cochin port, which included 34,255 20- foots and 51,304 40- foots. A total of 1454437886 Kgs was exported through Cochin Port in the period of 2021 –22.

## 3.3 Outbound Commodity Analysis

## Commodities exported through Cochin port during 2018 -19

| Commodity | 20' | 40' | TEUS | QTY.(KGS) |
|---|---|---|---|---|
| BOOKS | 9 | 3 | 15 | 118924 |
| CARDAMOM | 156 | 3 | 162 | 1293587 |
| CASHEW KERNELS | 1765 | 112 | 1989 | 29064214 |
| CHEMICALS | 2798 | 294 | 3386 | 65185414 |
| CHILLIES | 32 | 11 | 54 | 576199 |
| CHINA CLAY | 177 | 413 | 1003 | 11531455 |
| COFFEE | 2068 | 106 | 2280 | 40649981 |
| COIR FIBRE | 1 | 0 | 1 | 5790 |
| COIR MATS | 2132 | 4904 | 11940 | 103839193 |
| COIR MATTING, RUGS, ETC. | 69 | 1055 | 2179 | 9884493 |
| COIR PRODUCT OTHERS | 6 | 4891 | 9788 | 110203965 |
| COIR YARN | 24 | 101 | 226 | 1471628 |
| COTTON GARMENTS | 1446 | 4517 | 10480 | 42344661 |
| COTTON GOODS | 358 | 338 | 1034 | 4419423 |
| COTTON/POLYESTER YARN | 291 | 1105 | 2501 | 23361387 |
| DRUGS & MEDICINES | 46 | 2 | 50 | 420181 |
| FISH & PRAWNS – FROZEN | 23 | 1395 | 2813 | 29804181 |
| FISH & PRAWNS - OTHER KINDS | 506 | 6585 | 13676 | 159336386 |
| FRUITS & VEGETABLES | 5 | 185 | 375 | 4205255 |
| FURNITURE | 27 | 31 | 89 | 293825 |
| GINGER | 18 | 13 | 44 | 501059 |
| HANDICRAFTS | 10 | 2 | 14 | 100931 |
| HARDBOARD | 114 | 48 | 210 | 2711598 |
| INSTRUMENTS & PARTS | 401 | 696 | 1793 | 10647278 |
| JUTE PRODUCTS | 75 | 384 | 843 | 5490325 |
| LEMONGRASS OIL | 6 | 0 | 6 | 49921 |
| MACHINERY & SPARES | 502 | 1855 | 4212 | 17390224 |
| METALS/MINERALS | 697 | 174 | 1045 | 12796585 |
| OILS - FISH OIL | 2 | 0 | 2 | 42570 |

| | | | | |
|---|---|---|---|---|
| OILS - OTHER VEGETABLE OILS | 479 | 173 | 825 | 9607886 |
| OLEORESINS OF SPICES | 1053 | 119 | 1291 | 8784979 |
| PEPPER | 106 | 192 | 490 | 5345904 |
| PERFUMERY | 11 | 5 | 21 | 137861 |
| PLYWOOD | 1167 | 243 | 1653 | 25052720 |
| PROVISIONS | 6113 | 1727 | 9567 | 149192208 |
| RARE EARTHS CHLORIDE | 7 | 0 | 7 | 140000 |
| RUBBER MANUFACTURED | 1909 | 3447 | 8803 | 83543869 |
| SEEDS | 12 | 0 | 12 | 158755 |
| SOAP | 135 | 2 | 139 | 2160717 |
| SPICES OTHERS | 2811 | 1838 | 6487 | 69255324 |
| SUNDRIES | 2848 | 3342 | 9532 | 87352370 |
| TAMARIND | 6 | 0 | 6 | 59270 |
| TEA | 1029 | 3675 | 8379 | 82206050 |
| TURMERIC | 74 | 49 | 172 | 2082742 |
| VEHICLES & PARTS | 159 | 357 | 873 | 4133856 |
| WOOD - OTHER KINDS | 1 | 0 | 1 | 11222 |
| WOOD – ROSEWOOD | 90 | 12 | 114 | 1083854 |
| WOOD MANUFACTURES – OTHERS | 3 | 0 | 3 | 29443 |

*Source: Cochin Chamber of commerce and Industry*

The above table shows the commodities that were exported through Cochin port in the year 2018 – 19. Various commodities including Sea food, Coir Products, garments, Spices, Stationary, Wood, Tea, Rubber Products etc. were exported during this period. Of the above, the commodity that was exported most as per TEUs was Fish and Prawns with 16,489 TEUs, followed by Coir Mats, Coir Mattings, Ruggings etc. together forming about 14,119 TEUs. Fish and Prawns were mostly exported to Vietnam with 3,200 TEUs in 2018 -19, followed by 1,954 TEUs to Thailand and 1,236 TEUs to USA. Coir Mats, Coir Mattings, Ruggings was mostly exported to USA with 7,059 TEUs in 2018-19 followed by 1,190 TEUs to UK and 523 TEUs to Italy. Rubber Manufactured goods were exported at 9,305 TEUs during this 2019-20 period and was exported most during

this period to Holland with 1,146 TEUs, followed by 958 TEUs to USA and 830 TEUs to UK.

## Commodities exported through Cochin port during 2019 - 20

| Commodity | 20' | 40' | TEUs | QTY.(KGS) |
|---|---|---|---|---|
| BOOKS | 5 | 3 | 11 | 107874 |
| CARDAMOM | 73 | 2 | 77 | 533309 |
| CASHEW KERNELS | 1905 | 175 | 2255 | 32375012 |
| CATTLE CASINGS, DRIED | 1 | 3 | 7 | 99724 |
| CHEMICALS | 3173 | 508 | 4189 | 77512183 |
| CHILLIES | 52 | 62 | 176 | 1778299 |
| CHINA CLAY | 265 | 201 | 667 | 8425392 |
| COFFEE | 1908 | 51 | 2010 | 36470051 |
| COIR FIBRE | 0 | 1 | 2 | 13300 |
| COIR MATS | 2092 | 4864 | 11820 | 102869640 |
| COIR MATTING, RUGS, ETC. | 76 | 1067 | 2210 | 10365464 |
| COIR PRODUCT OTHERS | 18 | 5829 | 11676 | 129226563 |
| COIR YARN | 28 | 65 | 158 | 1087242 |
| COTTON – WASTE | 0 | 1 | 2 | 14627 |
| COTTON GARMENTS | 1593 | 4660 | 10913 | 43545442 |
| COTTON GOODS | 278 | 286 | 850 | 3569417 |
| COTTON/POLYESTER YARN | 233 | 721 | 1675 | 16085499 |
| DRUGS & MEDICINES | 60 | 17 | 94 | 712507 |
| ELECTRONIC APPLIANCES, EQUIP.&COMPONENTS | 11 | 1 | 13 | 87974 |
| FISH & PRAWNS – FROZEN | 15 | 1189 | 2393 | 24192494 |
| FISH & PRAWNS - OTHER KINDS | 508 | 5408 | 11324 | 133480816 |
| FRUITS & VEGETABLES | 6 | 171 | 348 | 3684271 |
| FURNITURE | 35 | 31 | 97 | 234777 |
| GINGER | 12 | 27 | 66 | 741370 |
| HANDICRAFTS | 21 | 15 | 51 | 197010 |
| HARDBOARD | 90 | 52 | 194 | 2509293 |
| INSTRUMENTS & PARTS | 396 | 722 | 1840 | 11290692 |
| JUTE PRODUCTS | 122 | 532 | 1186 | 7878272 |
| LEATHER GOODS | 0 | 1 | 2 | 15107 |
| LEMONGRASS OIL | 10 | 0 | 10 | 57723 |
| MACHINERY & SPARES | 514 | 1446 | 3406 | 15946201 |
| METALS/MINERALS | 704 | 180 | 1064 | 14562715 |
| OILS - FISH OIL | 3 | 0 | 3 | 60000 |
| OILS - OTHER VEGETABLE OILS | 519 | 81 | 681 | 8969506 |
| OLEORESINS OF SPICES | 1145 | 128 | 1401 | 9574982 |
| OSSEIN | 0 | 5 | 10 | 100000 |
| PEPPER | 159 | 306 | 771 | 8505826 |

| | | | | |
|---|---|---|---|---|
| PERFUMERY | **21** | **4** | **29** | **206597** |
| PERSONAL | **14** | **1** | **16** | **52654** |
| PLYWOOD | **1174** | **402** | **1978** | **29189098** |
| PROVISIONS | **6136** | **2287** | **10710** | **164254706** |
| RARE EARTHS CHLORIDE | **15** | **0** | **15** | **317104** |
| RUBBER MANUFACTURED | **2133** | **3586** | **9305** | **89970982** |
| SEEDS | **7** | **0** | **7** | **45045** |
| SOAP | **156** | **1** | **158** | **2500086** |
| SPICES OTHERS | **2767** | **1910** | **6587** | **70774628** |
| SUNDRIES | **3054** | **3237** | **9528** | **89740243** |
| TAMARIND | **6** | **0** | **6** | **64420** |
| TEA | **1012** | **3586** | **8184** | **78101143** |
| TURMERIC | **88** | **76** | **240** | **2776377** |
| VEHICLES & PARTS | **183** | **201** | **585** | **3763413** |
| WOOD - OTHER KINDS | **1** | **2** | **5** | **49017** |
| WOOD – ROSEWOOD | **78** | **20** | **118** | **1066096** |
| WOOD – TEAKWOOD | **0** | **1** | **2** | **7200** |
| WOOD MANUFACTURES – OTHERS | **9** | **3** | **15** | **145032** |

*Source: Cochin Chamber of commerce and Industry*

The above table shows the commodities that were exported through Cochin port in the year 2019 - 20. Similar to the previous year, Various commodities including Sea food, Coir Products, garments, Spices, Stationary, Wood, Tea, Rubber Products etc. were exported during this period. Coir Mats, Coir Matting, Ruggings together topped the chart during 2019-20 with a total of 14,030 TEUs, which was followed by Fish and Prawns with 13,717 TEUs being exported through Cochin Port during this period. Cotton Garments followed the above with 10,913 TEUs being exported during 2019-20. Coir Mats, Mattings, Ruggings etc. were exported most to USA with 7,146 TEUs during 2019-20 followed by 1,044 TEUs to UK and 527 TEUs to Germany through Cochin Port during the period

of 2019-20. Fish and Prawns were mostly exported to USA with 2,066 TEUs during this period, followed by 1,958 TEUs to China and to Thailand with 1,206 TEUs during 2019-20. Cotton garments were mostly exported to UAE with 3,105 TEUs during this period. Rubber Manufactured goods were exported at 9,305 TEUs during this 2019-20 period and was exported most during this period to Holland with 1,146 TEUs, followed by 958 TEUs to USA and 830 TEUs to UK.

## Commodities exported through Cochin port during 2020 - 21

| Commodities | 20' | 40' | TEUs | QTY.(KGS) |
|---|---|---|---|---|
| BOOKS | 5 | 1 | 7 | 86481 |
| CARDAMOM | 242 | 11 | 264 | 1844636 |
| CASHEW KERNELS | 1397 | 112 | 1621 | 23368534 |
| CHEMICALS | 2737 | 413 | 3563 | 68453006 |
| CHILLIES | 145 | 133 | 411 | 4452141 |
| CHINA CLAY | 148 | 97 | 342 | 4181905 |
| COFFEE | 1699 | 122 | 1943 | 34102862 |
| COIR FIBRE | 2 | 0 | 2 | 10440 |
| COIR MATS | 2053 | 5981 | 14015 | 126076803 |
| COIR MATTING, RUGS, ETC. | 60 | 827 | 1714 | 7975234 |
| COIR PRODUCT OTHERS | 12 | 6761 | 13534 | 148992287 |
| COIR YARN | 33 | 95 | 223 | 1474515 |
| COTTON GARMENTS | 1360 | 3497 | 8354 | 34248663 |
| COTTON GOODS | 228 | 260 | 748 | 3105214 |
| COTTON/POLYESTER YARN | 198 | 714 | 1626 | 15317769 |
| DRUGS & MEDICINES | 47 | 25 | 97 | 703829 |
| ELECTRONIC APPLIANCES, EQUIP.&COMPONENTS | 6 | 2 | 10 | 57555 |
| FISH & PRAWNS – FROZEN | 36 | 1499 | 3034 | 32126010 |
| FISH & PRAWNS - OTHER KINDS | 360 | 4685 | 9730 | 118036342 |
| FRUITS & VEGETABLES | 10 | 56 | 122 | 1463556 |
| FURNITURE | 23 | 31 | 85 | 264370 |
| GINGER | 52 | 69 | 190 | 2110122 |
| HANDICRAFTS | 11 | 11 | 33 | 472792 |
| HARDBOARD | 70 | 32 | 134 | 1697893 |
| INSTRUMENTS & PARTS | 599 | 755 | 2109 | 13471232 |
| JUTE PRODUCTS | 135 | 573 | 1281 | 9089895 |
| LEMONGRASS OIL | 8 | 0 | 8 | 85462 |
| MACHINERY & SPARES | 413 | 1346 | 3105 | 14531108 |

| | | | | |
|---|---|---|---|---|
| METALS/MINERALS | **664** | **220** | **1104** | **15410219** |
| OILS - FISH OIL | **16** | **0** | **16** | **376080** |
| OILS - OTHER VEGETABLE OILS | **544** | **90** | **724** | **10069188** |
| OLEORESINS OF SPICES | **1142** | **154** | **1450** | **9735332** |
| PEPPER | **220** | **442** | **1104** | **11998586** |
| PERFUMERY | **14** | **18** | **50** | **366893** |
| PERSONAL | **7** | **2** | **11** | **26519** |
| PLYWOOD | **1187** | **421** | **2029** | **29369047** |
| PROVISIONS | **7518** | **2895** | **13308** | **200280193** |
| RARE EARTHS CHLORIDE | **5** | **0** | **5** | **92227** |
| RUBBER MANUFACTURED | **2269** | **4057** | **10383** | **102600699** |
| SEEDS | **12** | **0** | **12** | **49790** |
| SOAP | **197** | **11** | **219** | **3464017** |
| SPICES OTHERS | **2915** | **1993** | **6901** | **73814294** |
| SUNDRIES | **2666** | **3141** | **8948** | **84077429** |
| TAMARIND | **4** | **0** | **4** | **48316** |
| TEA | **1020** | **3209** | **7438** | **69901686** |
| TURMERIC | **211** | **248** | **707** | **8326146** |
| VEHICLES & PARTS | **194** | **240** | **674** | **5469255** |
| WOOD - OTHER KINDS | **1** | **0** | **1** | **3063** |
| WOOD – ROSEWOOD | **81** | **17** | **115** | **1796245** |
| WOOD MANUFACTURES – OTHERS | **10** | **0** | **10** | **93848** |

*Source: Cochin Chamber of commerce and Industry*

The above table shows the commodities that were exported through Cochin port in the year 2020 - 21. Similar to the previous years, commodities like Coir Products, Sea food, Cashew Kernals, garments, Spices, Stationary, Wood, Tea, Rubber Products etc. were exported during this period. The most exported commodity through cochin port during this period was Coir Mats, Mattings, Ruggings with 15,729 TEUs, followed by Other Coir Product classified goods with 13,534 TEUs and Provisionary goods were exported at 13,308 TEUs. During this period, Coir Mats, Mattings, Ruggings were exported through Cochin Port most to USA with 8,937 TEUs, followed by UK with 1,195 TEUs and Germany

with 537 TEUs. The other coir products classified commodities were exported most to China with 10,572 TEUs and to Holland with 1,244 TEUs. Rubber Manufactured goods were exported at 10,383 TEUs during this 2020-21 period and was exported most during this period to Holland with 1,651 TEUs, followed by 1,178 TEUs to USA and 1,064 TEUs to UK.

## Commodities exported through Cochin port during 2021-22

| Commodity | 20' | 40' | TEUs | QTY.(KGS) |
|---|---|---|---|---|
| BOOKS | 6 | 4 | 14 | 107626 |
| CARDAMOM | 400 | 46 | 492 | 3835664 |
| CASHEW KERNELS | 1363 | 171 | 1705 | 24299306 |
| CHEMICALS | 2695 | 384 | 3463 | 67750801 |
| CHILLIES | 105 | 194 | 493 | 5347863 |
| CHINA CLAY | 69 | 113 | 295 | 3539050 |
| COFFEE | 3033 | 245 | 3523 | 62069438 |
| COIR FIBRE | 0 | 1 | 2 | 9504 |
| COIR MATS | 1749 | 6372 | 14493 | 135445223 |
| COIR MATTING, RUGS, ETC. | 40 | 802 | 1644 | 6797356 |
| COIR PRODUCT OTHERS | 13 | 4369 | 8751 | 96969520 |
| COIR YARN | 10 | 109 | 228 | 1523498 |
| COTTON GARMENTS | 1369 | 3146 | 7661 | 33989325 |
| COTTON GOODS | 720 | 1110 | 2940 | 12923632 |
| COTTON/POLYESTER YARN | 220 | 1587 | 3394 | 34069746 |
| DRUGS & MEDICINES | 51 | 33 | 117 | 1091941 |
| ELECTRONIC APPLIANCES, EQUIP.&COMPONENTS | 1 | 1 | 3 | 14302 |
| FISH & PRAWNS – FROZEN | 17 | 1912 | 3841 | 41551063 |
| FISH & PRAWNS - OTHER KINDS | 156 | 5581 | 11318 | 138028335 |
| FRUITS & VEGETABLES | 30 | 316 | 662 | 6934629 |
| FURNITURE | 28 | 77 | 182 | 774241 |
| GINGER | 31 | 116 | 263 | 2958314 |
| HANDICRAFTS | 8 | 6 | 20 | 83760 |
| HARDBOARD | 35 | 79 | 193 | 2613131 |
| INSTRUMENTS & PARTS | 705 | 886 | 2477 | 17337967 |
| JUTE PRODUCTS | 99 | 585 | 1269 | 9648164 |
| LEATHER GOODS | 1 | 1 | 3 | 10621 |
| LEMONGRASS OIL | 8 | 3 | 14 | 111972 |
| MACHINERY & SPARES | 456 | 1429 | 3314 | 17258603 |
| METALS/MINERALS | 1437 | 245 | 1927 | 33401860 |

| | | | | |
|---|---|---|---|---|
| OILS - FISH OIL | **11** | **0** | **11** | **233835** |
| OILS - OTHER VEGETABLE OILS | **626** | **105** | **836** | **12101526** |
| OLEORESINS OF SPICES | **836** | **230** | **1296** | **9671662** |
| PEPPER | **191** | **560** | **1311** | **14285335** |
| PERFUMERY | **15** | **21** | **57** | **409640** |
| PERSONAL | **5** | **0** | **5** | **21748** |
| PLYWOOD | **1424** | **1085** | **3594** | **53011555** |
| PROVISIONS | **7096** | **3446** | **13988** | **206388864** |
| RUBBER MANUFACTURED | **1990** | **5621** | **13232** | **118086688** |
| SEEDS | **5** | **0** | **5** | **62278** |
| SOAP | **158** | **5** | **168** | **2620549** |
| SPICES OTHERS | **2349** | **2159** | **6667** | **72103439** |
| SUNDRIES | **3367** | **4356** | **12079** | **122699437** |
| TAMARIND | **3** | **0** | **3** | **27202** |
| TEA | **830** | **3007** | **6844** | **65199284** |
| TURMERIC | **167** | **219** | **605** | **7166466** |
| VEHICLES & PARTS | **230** | **538** | **1306** | **7980770** |
| WOOD - OTHER KINDS | **4** | **1** | **6** | **74156** |
| WOOD – ROSEWOOD | **90** | **16** | **122** | **1566240** |
| WOOD MANUFACTURES – OTHERS | **3** | **12** | **27** | **230757** |

*Source: Cochin Chamber of commerce and Industry*

The above table shows the commodities that were exported through Cochin port in the year 2021 - 22. Almost similar to the previous years, different commodities like Coir Products, Sea foods, Cashew Kernals, garments, Spices, Stationary, Fruits and Vegetables, Wood, Tea, Rubber Products etc. were exported during this period. The most exported commodity during this period was Coir Mats, Mattings, and Ruggings etc. with 16,137 TEUs, followed by Fish and Prawns with 15,159 TEUs. Rubber Manufactured goods were exported through Cochin port at 13,232 TEUs during this period. During this period, Coir Mats, Mattings, and Ruggings etc. were exported most to USA with 8,844 TEUs, followed by to UK with 1,146 TEUs and to Germany with 595 TEUs. Fish and Prawns, during

this period, was exported most to USA with 2,730 TEUs, followed by to China with 2,423 TEUs, to Spain with 1,002 TEUs and Thailand with 975 TEUs. Rubber Manufactured products were exported, through cochin port, most to Holland with 2,819 TEUs, followed by to USA with 1,565 TEUs, to UK with 999 TEUs and to UAE with 864 TEUs during 2021-22.

# CHAPTER IV

# FINDINGS, CONCLUSIONS AND SUGGESTIONS

## 4.1 Findings

Following findings are shaped from the analysis

1. Cochin Yearly outbound container traffic has been growing from 2018-19 to 2021-22 despite the pandemic impact in 2020.

2. In the year 2018-19, 1, 20,607 Outbound TEUs were handled at Cochin. This grew to 1, 21,140 TEUs in 2019- 20. This grew further to 1, 23,518 TEUs in 2020-21. Outbound TEUs handled at Cochin grew even higher to 1, 36,863 TEUs in 2021-22.

3. In 2018 – 19, around 31,795 20-foot outbound containers and about 44,406 40- foot outbound containers were handled in Cochin. In 2019-20, 20-foot outbound containers grew to 32,884, but at the same time, the number of 40- foot containers fell slightly to 44,128.

4. In 2020-21, around 32,986 20-foot outbound containers were in handled at Cochin and about 45,266 40-foot outbound conatiners were handled at the

same time. In 2021-22, about 34,255 20-foot outbound conatiners and 51,304 40-foot conatiners were handled at Cochin.

5. Coir Products (Coir Mats, Mattings and Ruggings) and Sea Food (Fish and Prawns) were found to be the most exported commodities during the 2018 – 19 to 2020-21 period.

6. Coir Mats, Mattings and Ruggings were majorly exported to USA and UK through Cochin Port during the 2018 – 19 to 2020-21 period.

7. Sea Food ie. Fish and Prawns were exported majorly to USA, China and Thailand from Cochin Port during the 2018 – 19 to 2020-21 period.

8. Rubber Products exported through Cochin Port was majorly to Holland, USA and UK during 2018 – 19 to 2020-21 period

## 4.2 Conclusion

The concept of containerization was introduced in India in the year 1968 in Bombay. Since that year, the Indian shipowners and the trade started considering its use. The First container was handled at Cochin port in the year 1979 which was carried by a vessel owned by the American Presidential Line (APL – now part of CMA CGM group). The vessel had also then commenced a scheduled service from Bombay which was then followed by many other Shipping companies.

Amongst all major Indian ports, Cochin is the closest to the International East West Shipping routes. This geo-strategic location of Cochin gives it a distinct advantage. The ICTT – the dedicated terminal of Cochin Port to handle container traffic is operated by DP World Cochin on BOT basis. In container handling, Cochin secured 4th position amongst all Major Ports in the country in 2021 – 2022 by recording the highest ever throughput of 7.36 Lakh TEUs with a growth of 6.65% over 2020-21. The period during 2018 -19 to 2020-21 also saw year on year growth in terms of conatiners handled at Cochin even in 2020 – the year with the first major country wide lockdown.

The Free Dwell time for Export and Import containers at ICTT, Vallarpadam (Cochin Port) was reduced as per TAMP notification no. TAMP/46/2019 – IGTPL dated 20th Feb 2020. However, the existing free dwell time has been extended till 31st May 2022. When the reduction is made effective, it could potentially have an impact on the movement of containerised goods through Cochin port and also on the turnaround time of containers in Cochin port.

### 4.3 Suggestions

- The close proximity of Cochin Port to east-west trade routes gives a geographic advantage over other existing ports in the country, which could be utilised further to its advantage

- Coastal Shipping has good scope in Cochin, if Inland Waterways are sufficiently developed. The abolishment of the Cabotage Law could be used to the Port's advantage.
- Free Dwell time for Export and Import containers at ICTT, Vallarpadam (Cochin Port) was reduction as per TAMP notification no. TAMP/46/2019 – IGTPL dated 20th Feb 2020. The existing free dwell time has been extended till 31st May 2022. When the reduction is made effective, it could potentially have an impact on the movement of containerised goods through Cochin port and also on the turnaround time of containers in Cochin port. This could be a future point of study.
- Changes with respect to abolishment of TAMP rules and imposition of Major Port Authorities Act 2021 , which came into effect on 3rd December 2021 is also a future point of Study.

## 5. Glossary

- **Containerisation**
  Containerization is a system of intermodal freight transport using intermodal containers

- **Export**
  Exports are goods and services that are produced in one country and sold to buyers in another

- **Outbound Containers**
  Outbound Containers refers to Containerised Cargo going-out of a Port or Country
- **TEU**
  TEU is short for Twenty-foot equivalent unit. It is an exact unit of measurement used to determine cargo capacity for container ships and terminals.

- **TAMP**
  Tariff Authority of Major Ports is an independent Authority to regulate all tariffs including both vessel related and cargo, and also rates for lease of properties in respect of Major Port Trusts and private operators.

- **UNCTAD**
  The United Nations Conference on Trade and Development (UNCTAD) is the part of the United Nations Secretariat dealing with trade, investment, and development issues

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