Chapter I

INTRODUCTION

In Part I of this chapter we shall briefly describe the Port of Cochin in its modern setting. In Part II, we shall introduce the present study, and discuss its scope, relevance and methodology.

I

Cochin is one of the six Major Ports in India, occupying the fifth place among them in terms of the annual traffic tonnage handled. It handled during 1960-61 over two million tonnes of cargo, consisting of some 16,21,261 tonnes of imports and 4,66,176 tonnes of exports. It lies almost on the southern end of the West Coast of India, at a Lat. 9°-58' north and Long. 76°-14' east, and constituted, during the period of this study, the only Indian Major Port to the south of Bombay, over a long coastline of some 780 miles between Bombay and Cape Comorin.

With the liberation of Goa containing the Port of Mormugao in December 1961, the number of Major Ports in India became seven. However, during the 'basic period' of the present study (1960- April-1961 March), Goa was in Portuguese hands, and was under an effective trade-ban from India.
'Major Ports' in India are the ports whose administration, according to the Constitution, falls within the jurisdiction of the Central Government, as distinct from the Minor Ports and Intermediate Ports (numbering respectively 208 and 18 in 1957) which appear under the Concurrent Legislative List of the Constitution, and which are at present under the administrative control of the State Governments. The location and position of Cochin Port vis-a-vis the other Major Ports and its neighbouring Minor and Intermediate Ports are shown by a map (Fig. No. 1.1) and a Table (Table No. 1.1) presented below. The map indicates the Port's location in relation with other ports including some important ports outside India, while the Table gives comparative figures of traffic tonnage passing through the various Major Ports including Cochin during the past five years.

THE LAYOUT OF THE PORT

The Port of Cochin is built in a fine natural harbour. It is in fact the most beautiful harbour in India, and is

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2 According to the Ports (Technical) Committee, (Government of India, 1946), a Major Port must ordinarily be able to accommodate vessels of 600 feet length and 30 feet draft at all times of the year. (Quoted in 'Report of the West Coast Major Port Development Committee regarding the possibility of siting a Major Port on the Coast covered by Kathiawar and Gujat', p. 2, (Government of India, 1948).

Table No. 1.1: showing the traffic position of the various Indian Major Ports during the last five years.

(in metric tonnes, in lakhs)

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</thead>
<tbody>
<tr>
<td>Calcutta</td>
<td>90.0</td>
<td>103.1</td>
<td>93.5</td>
<td>97.8</td>
<td>95.8</td>
</tr>
<tr>
<td>Bombay</td>
<td>121.7</td>
<td>133.2</td>
<td>119.4</td>
<td>133.6</td>
<td>147.2</td>
</tr>
<tr>
<td>Madras</td>
<td>27.1</td>
<td>27.1</td>
<td>24.8</td>
<td>27.6</td>
<td>30.4</td>
</tr>
<tr>
<td>Vizagapatam</td>
<td>15.1</td>
<td>25.3</td>
<td>25.4</td>
<td>24.9</td>
<td>28.5</td>
</tr>
<tr>
<td>Cochin</td>
<td>17.6</td>
<td>18.3</td>
<td>18.1</td>
<td>19.5</td>
<td>20.1</td>
</tr>
<tr>
<td>Kandla</td>
<td>4.8</td>
<td>8.5</td>
<td>10.9</td>
<td>11.4</td>
<td>15.7</td>
</tr>
</tbody>
</table>

Note: - Including Bunkers, the total traffic of Cochin during 1960-61 was 20,87,437 tonnes, consisting of 4,66,176 tonnes of exports and 16,21,261 tonnes of imports.

MAP SHOWING
- THE PORTS OF INDIA -

REFERENCES:
○ TOTAL TRAFFIC IN 1960-61 THROUGH EACH MAJOR PORT.
often called the 'Queen of the Arabian Sea', in view of its magnificent scenic background and spacious layout. It is located at a point where a vast inland backwater system, spreading like an endless lake over an area of some 125 sq. miles, meets the Arabian Sea over a narrow opening on the shoreline, measuring some 440 yards in breadth. Just inside this backwater lake, a few yards inland from the above opening which is also the harbour-entrance, is the Harbour of Cochin. The two arms of the mainland which lie on both sides of this entrance, sandwiched between the backwaters and the sea, form the natural breakwaters of this harbour. Steamers enter through the above inlet even in the roughest weather, and work in the spacious calm waters inside, either at stream-moorings, or alongside wharves. Most of the Port's wharf-berths are built alongside the Willingdon Island, which is an island of about 780 acres in area, created by reclamation, and which is located within the harbour-waters, only about a mile from the harbour-entrance.

The broad layout of the port and harbour at Cochin could be seen from the chart enclosed (See Fig. No. 1.2). The position of the central Willingdon Island, set in the harbour-waters, with connecting bridges to the mainlands on both sides, as well as the natural breakwater arms of Vypeen and Fort Cochin, may be particularly noted from the chart. The arm of Vypeen is a sandy stretch of
crowded fishing villages, while the arm of 'Cochin',
comprising Fort Cochin and Mattancherry, is the busiest
business centre south of Bombay, where much of the trading
activity related to the port-traffic of Cochin is carried
on. The area of Fort Cochin was the place where the
first European Fort in India, as well as the first
European 'factory' in India, was erected; and it has been
from very early times, and until the creation of the
Willingdon Island, the seat of the old wharves, jetties
and Port-offices at Cochin. The Ernakulam town, shown
in the chart on the east of the Willingdon Island across
a stretch of the backwaters, is another busy commercial
centre, also connected with the trade of the Port.
Ernakulam is on the mainland of the West Coast, and from
here direct road and rail lines radiate into all parts
of the mainland of India. The Port-island, it would be
noted, is connected to Ernakulam by a big road-rail-bridge.
The backwaters shown in the map (all around the Island)
also may be specially noted. As already mentioned, the
harbour-entrance is only the mouth of a vast backwater
system, extending several miles to the north and south
of the Port. These backwaters form a tidal lake, receiv-
ing the heavy perennial discharges of the several rivers
flowing down from the Western Ghats, for delivering it
slowly to the Arabian Sea, through the outlet at Cochin.
This backwater system, it may be added, forms an invaluable
asset to the Port, since, as we shall see in detail later, it enables cheap inland transportation for much of the Port's traffic. Yet another important feature of the Port-layout, as shown in the chart, is the Approach Channel between the Harbour and the sea. This Channel is some 450 feet in width and about 4 miles in length, and is maintained at a minimum depth of 32 feet at low water in all the seasons of the year.

The Willingdon Island is a well-planned township. The main offices of the Port Administration, Customs Department, etc. are situated on the north end of this Island. The shore-line between this north-end and the south-end of the Island is lined by the Boat Train Pier, the North Coal Berth, the Low Wharf, the Main Wharf, the South Coal Berth, and the extensive Food Department godowns - in this order from North to South. Parallel to this shore, on the western side, lie the stream moorings, while parallel to the shore on the eastern side lie the roads, rails and godowns. The central parts of the Island are covered with lines of residential quarters, business premises and several connecting roads. On the eastern side of the Island, facing Ernakulam, there is much vacant land, where could be built many more deep-water wharves. The new Four-berth Wharf, under construction, is on the northern end of this undeveloped eastern side of the Island. The Port has, in this sense,
almost infinite scope for further physical development. New Wharves could be built all around the Willingdon Island, on the Fort Cochin shore, and also on the Ernakulam shore. There is in fact a long range plan with the Port authority to build more wharves on the eastern side of the Island, and also to create a new island-reclamation to the east of the Willingdon Island to locate still more wharves. The recent decision by the Government of India to locate a 2 1/2 million ton oil refinery, as well as the Nation's second shipbuilding yard at Cochin, on the foreshore of Ernakulam, is incidentally a recognition of the vast natural facilities of the Cochin Harbour.

EQUIPMENTS AND FACILITIES

A brief description may be given of the equipments and other physical facilities available at the Port, today. The Port of Cochin has, in all, twenty-one deep-water berths. These include eleven fore and aft stream berths and one swinging berth in the Mattancherry channel; four quay-berths, two coal berths and one Boat Train Pier on the Willingdon Island; and two Tanker Berths on the Ernakulam fore-shore. In addition, there is an anchorage for country-crafts marked by buoys, where sailing vessels can moor with their own gear. There is also a long line of 'low-wharves' for lighterage traffic: a 1200 feet long low-
wharf on the Willingdon Island with some thirteen lighter jetties, and a 620 feet low-wharf on the Fort Cochin shore of the harbour where sailing vessels also can berth and work. Further, a new deep-water wharf with four most modern quay-berths is under an advanced stage of construction on the eastern side of the Willingdon Island. Many of the existing quay-berths can accommodate vessels with 30 feet draft, at low water. The minimum drafts at low water of each berth, and the length of the steamer that could be accommodated at each mooring, are presented in the Table No. 1,2 below from soundings taken on a random date.

The four quay-berths on the Willingdon Island, with a continuous frontage of 2200 feet in length, form the Main Wharf of the Port. They are equipped with cranes, transit sheds, warehouses, railway sidings and a lorry weigh-bridge. The coal berths are for discharging bulk coal from collieries into waiting rail-wagons, or to the open storage area, the discharge being done with the help of ships' derricks. The Boat Train Pier is used to berth passenger vessels, ore loaders and also for the bunkering of vessels. The Tanker berths are for the discharge of bulk mineral oils, and are fitted with pumping installations and pipes leading to the big oil-storage tanks in Ernakulam. As regards the stream-berths, they are used by steamers which handle their traffic with the
Table No. 1.2 showing minimum soundings in the various berths at Cochin Port as on 5-6-1961

<table>
<thead>
<tr>
<th>Berth Description</th>
<th>Clear Distance in feet between buoys</th>
<th>Minimum Depth at low water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stream berth No. 1</td>
<td>600 (radius)</td>
<td>27.5</td>
</tr>
<tr>
<td>(Swinging berth)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stream berth No. 2</td>
<td>150</td>
<td>17.0</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>16.8</td>
</tr>
<tr>
<td></td>
<td>350</td>
<td>15.8</td>
</tr>
<tr>
<td></td>
<td>350</td>
<td>16.0</td>
</tr>
<tr>
<td></td>
<td>350</td>
<td>19.8</td>
</tr>
<tr>
<td></td>
<td>550</td>
<td>23.5</td>
</tr>
<tr>
<td></td>
<td>575</td>
<td>23.5</td>
</tr>
<tr>
<td></td>
<td>625</td>
<td>22.5</td>
</tr>
<tr>
<td></td>
<td>585</td>
<td>18.5</td>
</tr>
<tr>
<td></td>
<td>600</td>
<td>16.5</td>
</tr>
<tr>
<td></td>
<td>675</td>
<td>27.3</td>
</tr>
<tr>
<td>Boat Train Pier</td>
<td>600</td>
<td>27.8</td>
</tr>
<tr>
<td>Quay I</td>
<td>600</td>
<td>31.8</td>
</tr>
<tr>
<td>Quay II</td>
<td>600</td>
<td>29.3</td>
</tr>
<tr>
<td>Quay III</td>
<td>600</td>
<td>31.8</td>
</tr>
<tr>
<td>Quay IV</td>
<td>600</td>
<td>31.8</td>
</tr>
<tr>
<td>Coal Berth (South)</td>
<td>500</td>
<td>31.8</td>
</tr>
<tr>
<td>Coal Berth (North)</td>
<td>N.A.</td>
<td>25.5</td>
</tr>
<tr>
<td>South Tanker Berth</td>
<td>650</td>
<td>31.8</td>
</tr>
<tr>
<td>North Tanker Berth</td>
<td>700</td>
<td>31.5</td>
</tr>
</tbody>
</table>

Source: Deputy Conservator, Cochin Port.
help of lighters. It may be added that there are about 250 lighters at work in the Port - all owned by private firms.

Turning to details of the gear-equipments at the Port, there are twelve electric level-luffing travelling cranes of lifting capacity from 1 1/2 to 10 tons, and four mobile diesel cranes of the same capacity - all on the Port's Main Wharf. There are, in addition, a 30-ton floating crane in the stream, and a number of hand-crains on the lightering wharves. Regarding storage accommodation, the Port has four transit sheds, 4 warehouses, and nine other storage sheds - all single-storied and all in and around the Main Wharf - together comprising a total roofed area of some 4.3 lakh sq. feet. In addition, some 22,300 sq. feet of covered storage accommodation exists on the Fort Cochin (low) Wharf, and a large area of open storage space on the Island. Extensive storage space also exists in the Island under the Food Department and Railway Department, not to speak of the storage accommodation built on land leased from the Port-authorities by the several business firms in the Port area.

The Port has also two powerful tugs for pilotage work, and two big dredgers for maintenance and capital dredging. There is also a dry dock on the Willingdon Island, some 240 feet long and 44 feet wide, mainly for docking the dredgers and other crafts owned by the Port.
The Railway Terminal Station lies just opposite to, and within a few yards from, the Main Wharf. All the berths on the Willingdon Island, as well as the transit sheds, warehouses and open storage areas, are served by railway sidings and roads.

A few words may be added about the administrative set-up of the Port. The Port is administered directly by the Ministry of Transport, of the Government of India, through an Administrative Officer appointed by the Government. There is no Port Trust at Cochin, unlike in other Major Ports like Bombay and Madras. There is, however, a Harbour Advisory Committee consisting of representatives of the commercial community, local bodies, the Government of Kerala and the Government of India. This body, however, meets only very infrequently; for example, it met only three times during 1960-61. The administration is therefore almost entirely in the hands of the Administrative Officer. The Administrative Officer is assisted by four senior officials - the Deputy Conservator, dealing with technical aspects of shipping at the Port; the Traffic Manager, dealing with the traffic management of the Port; and the Chief Engineer. and the Chief Accountant dealing, respectively, with the engineering and financial aspects of the Port management. The detailed organisational set-up of the Port could be seen from the enclosed chart (See Fig. 1.3).
II

The above, in brief, is the Port of Cochin. We may now turn to the nature of the present study itself, relating to the economics of this Major Port:

(a) **Scope of the study**

The following are the important questions, relating to the economics of this Port, that have been sought to be studied in the Chapters to follow in this thesis:

(1) **History** :- The first question is - How did Cochin start, and how did it grow into its present size and importance? What was the process of this growth, and what were the forces at work in bringing this about?

(2) **Traffic flows and hinterland** :- What is the exact extent of the Port's hinterland or service-area? What is the nature and intensity of the Port's traffic spread over this area? Where exactly does each item of the Port's imports go, and each item of its exports originate? What are the patterns of transport-use of each of these commodity movements between the Port and its hinterland, and more specifically, what is the share of each traffic-item, to and from the Port, moved by road, rail or waterway respectively?

(3) **Port working** :- What is the economics of the Port's various operations? What is the position of the turn-round of vessels or the rate of cargo - handling at
the Port, and how does it change with changing conditions of work - like the position of the berth, the type of the cargo, the time of the shift, and the nature of the operation? What has been the trend of this operational speed of the Port over the past few years?

How is dock labour organised at the Port, and what is the position of the wage rates, the labour-productivity and employment-availability, under each class of dock labour?

What is the economics of the various Port charges, and what has been the financial performance of the Port over years?

(4) **Trade** :- What is the nature of the commercial organisation behind the Port's trade? What are the agencies and organisations assisting in the distribution of the Port's imports, and in the mobilisation of the Port's exports?

(5) **Relations with other Ports** :- What are the Port's relations, competitive and complementary, with other ports?

While all these questions have been sought to be answered with reference to Cochin in what follows, the crucial part of the present work, it may be stated, consists of the attempt made to chart the course of the Port's traffic-flows between the Port and each District in South India, during the year 1960-61, with special reference to the transport-use patterns of these commodity-
movements. This has made possible the exact areal demarcation of the Port’s hinterland, on the basis of actual traffic-spread data, as well as the estimation of the utilisation of different transport-means in moving each traffic-item between the Port and each District in the hinterland. Of equal importance also, is the detailed turn-round study of a large number of steamers, about six hundred in all, operating under various working conditions at the Port during the year of study.

(b) Previous studies in the subject

It may be stated here that no such comprehensive study has so far been undertaken about the working economics and traffic-flow analysis of Cochin, or of any other Major Port, in India, though several somewhat similar studies, at least as far as hinterland and traffic-flow analysis are concerned, have been conducted in other countries. Port-literature in India, until now, is mainly in the form of reports by Committees appointed by the Government for specific purposes relating to one or more of Indian ports. Most of these Reports are mainly

4 See the Bibliography at the end of this thesis, under items 28, 77, 79-82, 84-86.

5 See Bibliography against items 39, 46, 51-55.
technical, and none of them, at any rate, studies the entire economics of any port, or presents any detailed traffic-survey of the port concerned. It might, however, be added that one reputed research institute in India - the National Council of Applied Economic Research at New Delhi, has recently brought out a useful series of traffic surveys of some Indian ports. However, these studies are, for one thing, confined to some Intermediate Ports only, and do not relate to any Major Port. Secondly, they were all conducted with a limited purpose in view - to forecast the likely traffic growth through the Port concerned, over a period of some years in the future - and therefore they do not, and were not required to, deal with several important economic aspects of these Ports - like turn-round analysis, dock labour problems, details of traffic-flows and their transport patterns, etc. Curiously, even a scientific attempt at the demarcation of the ports' hinterland on the basis of actual traffic-spread data, which is essential for any sound forecast of a port's future trade, is found to be lacking in these studies.

The National Council has by now published Traffic Surveys of the Ports of (i) Tuticorin, (ii) Beypore, (iii) Mangalore and Malpe, and (iv) Karwar, Honavar and Kundapur Ports. Refer Bibliography at the end for more details.
The present study therefore is a modest, but, pioneering attempt in India in the line of exhaustive traffic and economic surveys of an Indian Major Port, leading to the exact areal demarcation of the port's hinterland, based on detailed traffic-spread data, and to the economic analysis of the port's working in all aspects.

The considerations leading to the choice of Cochin rather than any other Indian Port for the present study may be briefly indicated. The primary reason for this was the author's personal association with the place and some of its people, his native place and place of education all having been quite within the vicinity of Cochin. Any other Major Port would have created the problem of having to learn a new local language also, in order to conduct the enquiry effectively. Moreover, Cochin was considered big enough, being a Major Port, to make the study significant and useful, while at the same time being small enough (as it occupied only the fifth position among the six Major Ports of India) to make the study manageable by one individual.

(c) Sources of data

There have been mainly three sources from which the data used in the present study have been drawn. These are - (1) published reports and documents, (2) unpublished Port-records, and (3) primary data collected from the various firms and agencies in the Port's hinterland.
The main published literature of use to the study consisted of - (1) the Annual Reports of the Cochin Chamber of Commerce (formerly British Chamber of Commerce) from 1857 to 1961, (2) the Annual Administration Reports of the Cochin Port, starting from 1936, (3) speeches, books and other documents bearing on the construction of the modern Cochin Port, chiefly published by Sir Robert Bristow, the architect of the modern Cochin Port, and (4) State Manuals, Gazetteers, Census Reports, etc. The study of the economic history of the Port presented in Chapter II is based mainly on these literature.

Of the above, the Cochin Chamber Reports were the most fruitful source for writing much of the early history of the Port, and its problems and processes of growth. These Reports used to contain in each issue extensive details of the value, volume and external directions of each item of the Port's trade. They also used to publish the Annual Presidential Address of the Chamber's Chairman,

7 Of these, the Reports from 1858 to 1889 were not available at the Chamber office, as they were lost in a fire havoc which broke out at Cochin in 1889.

8 There are, in the main, three publications by Sir Bristow:

(2) "Cochin Port : 1500-1937", being a collection of the speeches and writings of Mr. Bristow.
and also, until recently, most of the Chamber's correspondence during the year under report - both of which invariably reflected the conditions and problems of the Port in each year, as well as the various economic and political factors of that time affecting the Port and the region behind it. These Reports form the only available source, today, for details of the trade passing through the Port right from the 1850's until about 1936, when Cochin was declared a Major Port, and a new Administrative Office was set-up for the Port, which began to keep regular Port-records and issue Annual Administration Reports. The Administration Reports of the Port were valuable for the information relating to the financial aspects of the Port's working, and also for some special traffic details, though, curiously, even today the most detailed published source for the traffic figures of the Port is the Annual Chamber Reports. 9

As regards unpublished records of the Port, it may be added that they formed the chief source of material for writing the Chapter on the "Port's Working". Particular mention may be made of the "Working reports" of 9

9 Recently, the Indian Chamber of Commerce at Cochin also, in addition to the Cochin Chamber of Commerce, has started publishing Annual Reports with details of the Port's trade. The extra details contained in the Chamber Reports relate mainly to the external direction of the Port's trade, in terms of value, volume and the item of trade. These details are compiled by the Chambers from the Daily List of the Port's Trade published every day by the Customs Authority at Cochin.
the individual steamers working at the Port from day to-
day. These reports, submitted by the concerned Steamer
Agents to the Port Office, embody exhaustive information
regarding the working of each steamer at the Port -
including information regarding the time of work, the
number of cranes or derricks and men engaged, the length
of idle-time, the cause of interruption, the nature of
cargo, the type of operation (loading or unloading), etc.
- thus forming an invaluable source for detailed turn-
round studies. The analysis of the working speed of
steamers at Cochin, included in the Chapter on "Port
working" (Chapter V), it may be added, is based on the
information collected from some six hundred and odd
'Working reports', relating to an equal number of steamers
which worked at Cochin during 1960-61.

However, the most important source of material for
the thesis was the third, viz. the field-surveys. It
may be stated that the most crucial chapters of this
thesis, viz. the chapters on hinterland and traffic-flows
(Chapters III and IV), are almost exclusively based on
the data collected from such surveys of innumerable
primary sources - consisting of firms, individuals and
other agencies, connected, in one way or other, with the
Port's traffic, during the year of study.

It may be particularly mentioned in this context
that, in India, there is at present no arrangement to
collect data regarding the traffic movements between any
Indian port and its service-area, unlike in the case of some foreign ports—the Italian Ports, for example—where full details of the origins and destinations in the hinterland of each traffic-item passing through the Port area collected at the first source, on a continuous basis. In India, the only data relating to port-traffic recorded on a continuous basis are confined to the quantity and value of the traffic, as well as the port of origin in the case of imports, and the port of destination in the case of exports.

(d) Methodology of the Study

The entire study involved four different and continuous stages of work, viz.: (1) the preliminary reading, pilot investigation and other preparations; (2) the final field-surveys, consisting of the collection of data from Cochin and its hinterland; (3) the processing and analysis of the data collected during the field-studies; and finally (4) the writing up of the Report.

The final field-surveys [Stage (2) above] took about a year to complete, of which two months were spent at the Cochin Chamber of Commerce studying their early Annual Reports, two months at the Port Office in familiarising with Port-routines and gathering all the necessary data from the Port-records, one month at the Port-wharves conducting spot-studies about Port-working, and another one
month at the other Major Ports of Madras and Bombay collecting information on some comparative points. All the remaining six months spent in field-studies were utilised for the "Traffic survey" proper, which meant collection of data relating to the traffic-flows between the Port of Cochin and its hinterland, from the innumerable firms, agencies and individuals connected with these traffic-movements — whose offices were located, in most cases, in the Port-town itself, and in some cases in various other parts of the Port's hinterland.

The methodology followed for this 'Traffic survey' may be briefly described. It may first be noted that the basic purpose of this survey was to trace the destinations of each of the Port's imports, and the origins of each of the Port's exports, which passed through it during 1960-61 (the base year of study), the imports and exports together amounting to over 20 lakh tonnes of cargo during the year. Another important purpose of the field-study was to gather information regarding the quantities of each item moved by each transport means, from or into the Port. All this information was necessary to demarcate the service-area of the Port, and to study various aspects of traffic-spread, commodity-flows and transport-use patterns in the hinterland.

The obvious way to collect all these data is to contact the various agencies engaged in actual import, export, forwarding and transport of each of the Port's
traffic-items, and gather the needed details. Considering that there were over 100 items of import and export handled at the Port in the year of study, theoretically, this might mean the impossible task of having to contact several hundreds of agencies and firms dealing with the Port's traffic, many of them possibly scattered over the vast service area of the Port. In practice, however, the problem was made much easier and more manageable than one would expect from the above theoretical situation, for the following important reasons:

Firstly, every out-station import or export firm was found to have either a regular forwarding or shipping agent or its own forwarding or shipping department at the Port, which meant that much of the required data could be collected from the Port-town itself, without having to go to every out-station importer or exporter. Secondly, as it turned out, there were only a few forwarding agencies dealing with each item at the Port, and since these firms were specialised on particular varieties of cargo for years, it was easy to know and contact them. Moreover, many of these firms combined activities relating to various traffic-items, and so the actual number of firms to be contacted was much less. Thirdly, there was also a good amount of concentration of direct import-export activity (as distinct from the activities of forwarding, shipping etc. done by intermediate agencies) in a few large firms and Government
Departments, who by their very largeness were well-organised, keen in keeping systematic records relating to their activities, and, as it happened, kind enough to help. Taking the concerned Government Departments for example, the Railway and the Food Departments together directly imported and disposed of large quantities of coal, food-grains and fertilisers, together amounting to some 30 per cent of total import tonnage; and some three other private firms, in the Alwaye industrial complex near the Port, together imported about 10 per cent of the total imports through the Port during the year (their imports consisting mainly of chemicals), while three big oil companies, located at Ernakulam, together accounted for the entire mineral oil imports in bulk, amounting to over 40 per cent of the total annual imports through the Port. Indeed, these were facts that became clear only after the completion of the survey, but still this pattern of concentration made the enquiries quite manageable for one person. In fact all the above cases together accounted for some 80 per cent of the total imports through the Port; and what is more, the data collected, though several days of work was involved in gathering the same from their daily records over a year, were so thorough that, to cite an instance, even a consignment of only 60 tons of fertilisers, going to a District (Bidar) over 800 miles from the Port, could be traced from records, with the date of despatch and the
mode of transportation. It must however be added that
the position was not so easy in the case of export-flows,
due to the multiplicity of agencies dealing in the
export trade.

The last special practical advantage which helped
the easy conducting of the survey was the fact that there
were many layers of data-sources concerning the same
traffic-flow, which made possible checks and counter-
checks of the information collected from various sources,
and which also assured the easy and fullest coverage
of items in cases where one layer of the data-source
failed to respond with full information. The data
collected from the Port's Railway Terminal Station con-
cerning railway movements of port-traffic, for example,
proved a valuable check on the transport and regional
distribution data collected from other firms. As it
turned out, the Railways had moved the largest share of
the Port's traffic in the year, and most details of these
movements - their items, quantities, destinations and
origins - could be collected from the Harbour Terminus
Station at Cochin, and from the Railway Offices attached
to the Railway-sidings leading to the big mineral oil
companies at Ernakulam. A typical instance of the multi-
ple source of information is given by the case of tea
exports through the Port. First of all, the Port office
(or the Customs Office or the Chamber of Commerce) could
give figures of the total quantity of tea exported through Cochin in the year of study. Then the Tea Board (of the Government of India) at Cochin could give (though in a different form) almost full data of tea exports with their regional origins, while the various export firms and Estate Agents at Cochin also could provide the same information, with details of their transport patterns as well. There were, in addition, some data available from the Tea Trade Association and from the two major Tea Auction firms at Cochin. Above all these, details of rail movements in tea could be collected from the Railways, and part of the road movement data could be gathered from the Kerala State Road Transport Department, which had arranged regular tea movements in trucks from some major estates to Cochin. Such multiple sources of data existed in most other cases as well, since every export or import item had necessarily to pass through different stages and different hands.

What was therefore actually done in gathering the traffic-flow details, was to contact each firm and agency connected with the Port-traffic in the Port-town; to gather information from the Railways as a second line of defence; to contact the concerned out-station importers and exporters if essential; to continuously put together the collected data itemwise, to compare them with the basic traffic tonnage figures obtained from the Port Office,
and to fill the gaps and clarify doubts by contacting more firms, or by further enquiries with firms already interviewed. In fact, some of the initial months of the survey were spent only in making contacts and informal enquiries, without actually knowing how to proceed; but soon the patterns described earlier became clear, and immediately it was decided to concentrate on the firms within the Port town itself. Literally, a vigorous hunt for data followed then, by contacting all the firms known to be associated with the Port - whose whereabouts and nature of activities were ascertained either from the Chambers of Commerce, or from other firms and finally, in some cases, by direct enquiries, after locating them with the help of their sign boards.

The technique of data collection followed was that of interview, though, in some cases, postal questionnaires also were used, especially for contacting out-station firms. The interview was based on a basic schedule of questions regarding the items, quantities, mode of transport and the regional origins (Districtwise) of exports or the regional destinations of imports - of any part of the Port's total traffic in 1960-61, with which the

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10 1st April 1960 - 31st March 1961, has been taken as the base year for the present study, since this was the latest year for which complete data could be collected at the time of the study. April-March is the official accounting year in India, and is therefore the accounting year for the Port of Cochin also.
firm concerned was associated. However, wherever the rapport was sufficient, the questions used to move further to various other issues as well, connected with the Port-traffic.

It may be stated that the resulting coverage of the traffic-flow that could be traced was over 90 per cent of the Port's total traffic tonnage during the year of study.

One feature of the entire enquiry was that it was conducted, as far as possible, in an informal way, through personal contacts and friendly introductions. This was possible partly because the author had the advantage of hailing from a place quite near Cochin (only 12 miles from the Port), and because he stayed for about a year, during the study, in the Port-area itself (in a residential quarters kindly arranged by the Port-authority) - both of which helped him to win many key acquaintances and friends among influential persons in the Port-offices, in the business circles and, most important, in the Chambers of Commerce, with comparative ease. Personal contacts have their own way of multiplying, especially if carefully handled, and this is exactly what happened in the case of the present study. It may be mentioned that, in most cases, the firms or individuals to be interviewed were contacted only after a proper friendly personal introduction to the party concerned came through,
either from a Port-official, or from the Chambers of Commerce, or from another firm or businessman. This personal approach proved helpful in many ways: Firstly, it was possible to fix appointments in advance of the interviews, so as to get the person to be interviewed free from any busy work; secondly, such informal and friendly discussion always yielded more accurate information than otherwise; thirdly, such talks could be extended with ease to longer periods than usual, and could be broken off for other occasion, for convenience. Moreover, the contacts so made could be further followed up in cases of doubts or inconsistency.

In the case of the Governmental agencies contacted, there was the additional advantage that permission had already been obtained from the Government, before the survey actually started, to gather the required data from these offices. The Gokhale Institute, to which the author was attached, had arranged this with the concerned Ministries in New Delhi, and these offices had, therefore, already received instructions to help, which made the collection of data from these sources quite an easy job.

In spite of the above advantages, there were some items of exports whose regional origins could not be completely traced through enquiries, and in these cases they had to be partly estimated on the basis of production data and other relevant information available. These and other details, regarding how the total regional spread
and transport patterns of the traffic flows were finally evolved, are discussed in the Appendix No. II towards the end of this thesis.

The data collected as above from the various primary sources, together with the information extracted from the Port records and from the Chamber Reports, were all later processed and studied at the Gokhale Institute. The write-up of this report also was done at the Institute.

On the whole, the entire study took some three years to complete. Of these, 4 months were spent in preliminary preparation, about a year in field-studies and some 10 months for the processing and analysis of the data and for further reading. The remaining 10 months had to be spent in drafting and finalising the report. The Study was started in September 1960, and the Report is complete now – in August 1963.

(e) **Outline of the Chapter-scheme**

Most briefly, we may outline here the chapter-scheme to follow. In the Chapter which opens next (Chapter II) we shall discuss the economic evolution of the Port of Cochin over the last one century, in its various aspects. In Chapter III, we shall try to determine and demarcate the hinterland-boundaries of Cochin, while in Chapter IV, we shall discuss at length aspects of the spatial relations between the Port and its hinterland. The
economics of the Port's working shall be considered in
Chapter V, and in Chapter VI, we may study some aspects
of the Port's trade, its direction and organisation.
In Chapter VII, which is also the last Chapter in this
thesis, we shall consider some aspects of Cochin's rela-
tions with some other Ports of India."