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**GOVERNMENT OF KERALA**

**REPORT ON  
THE TRAFFIC POTENTIAL SURVEY  
OF  
ALLEPPEY PORT**

**ISSUED BY  
THE DIRECTORATE OF ECONOMICS AND STATISTICS**

**1980**





GOVERNMENT OF KERALA

REPORT ON  
THE TRAFFIC POTENTIAL SURVEY

OF

ALL INDIA

BY

THE DIRECTORATE OF ECONOMICS AND STATISTICS

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## PREFACE

The Alleppey Port on the western side of the old Travancore state was once known as the Venice of the East. Consequent on various changes and developments elsewhere the Alleppey Port lost its name and shipping activities which affected the economy of the Alleppey town and even the district to a considerable extent. Various representations have been made to the State and Central Governments by the affected parties to take necessary steps to improve the situation and make Alleppey a full-fledged Port. The Government of Kerala have directed the Directorate of Economics and Statistics to conduct a survey to assess the traffic potential of Alleppey Port and other allied matters before undertaking any development scheme on this score.

Special staff was posted for the purpose and the survey was undertaken under the immediate supervision of Shri K.M. Mathew, Special Officer. Shri M. Kuttappan, Assistant Director in the Directorate was in charge of the survey. Smt. K. Leelakumari, Assistant Director, analysed the data and drafted the report. All the operations were under the direct supervision of Shri R. Gopalakrishnan Nair, Joint Director of this Department.

It was a tough job to seek the opinions of various personalities in the line supported by facts and figures and I take this opportunity to appreciate the work done by these officers and the field staff in this regard. I also extend my gratitude to all those who have contributed for the cause by giving necessary help to the survey team and offering valuable suggestions to be included in this report.

I hope this report may prove useful in the drawing up of development schemes for the improvement of Alleppey Port.

Trivandrum,  
-10-1980.

Dr. P. A. NAIR,  
*Director,*  
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## TRAFFIC POTENTIAL SURVEY OF ALLEPPEY PORT

### I. INTRODUCTION

The Country's Five-Year Plans aim at increasing per capita income, attaining self-reliance in food, solving the massive unemployment problem, reducing regional disparity in economic development within the country, etc. Transport system plays an important role in this endeavour for economic development. A good net work of transport and communications is regarded as a strategic infra-structure of a developing economy. The transport sector accounted for nearly one-fifth of the total investment in the national economy during the plan era. The increasing trade relations with the foreign nations and among States in India give ports and their development a strategic importance in the country's plan formulations.

The objectives of development of this sector in the coming years should be the optimisation of investment in this system tempered by the need for regional development and social justice. The emphasis on employment generation in the country side and the provision of basic minimum needs to the masses presupposes the development of a good transport net work backed up by a well organised communication system.

Ports in Kerala have a special place in the State's transport system. Besides the major port of Cochin, the State has 14 intermediate and minor ports. Calicut, Alleppey and Neendakara are the intermediate ports. The minor ports are Kasaragode, Cannanore, Azhikkal, Tellicherry, Badagara, Beypore, Ponnani, Munambom, Quilon, Trivandrum and Vizhinjam.

As regards ports and their development in the State the following were the achievements over a period of time.

During the first plan period a pier at Trivandrum was constructed and some improvements were effected to the ports at Alleppey and Calicut. During the Second Plan period some development of minor ports at Alleppey, Kozhikode, Badagara, Tellicherry, Cannanore, Azhikkal and Ponnani was undertaken. Several works were delayed for want of foreign exchange and import licence. Improvement works executed during the Third Plan period were more effective compared to the achievements of the previous two plan periods. Establishment of lighterage port at Neendakara was the major programme in this sector for which a provision of Rs. 111.65 lakhs was made. The Neendakara port was commissioned and operations commenced at the port during the Fourth Plan period. The construction of the dredger costing about Rs. 2.22 crores was completed and dredging was undertaken at Beypore. A separate harbour engineering wing under the Port Department was formed with headquarters at Trivandrum. Likewise the hydrographic survey unit was developed. An amount of Rs. 332 lakhs was allotted in the State sector for ports and pilotage in the Fifth Plan period. The construction of a self-propelled refrigerated barge for Neendakara port at a total cost of Rs. 12 lakhs is nearing completion. Capital repairs and major additions for piers and other structures at intermediate and minor ports were undertaken. The inauguration of the Kerala Institute of Nautical Studies based at Kovalam/Vizhinjam in 1977 is an important step in the field of maritime training in the State. The centrally sponsored scheme in the Fifth Plan was the development of Beypore Port. The dredging works at Beypore are in progress.

The deterioration in the economic structure of the Alleppey port and the need for developing Alleppey port into an all-weather port were brought to the notice of the State Government and the Central Government by the affected parties.

Alleppey flourished for so many years commercially till the development of the Cochin harbour. The port of Alleppey cannot function throughout the year. The monsoon months, May to August are not safe for the functioning of the port. Though Alleppey was the only commercial centre in Travancore where the entire hill produce like pepper, ginger, cardamom, etc., were marketed, the development of Cochin harbour affected the economic structure of Alleppey to a very great extent. As a result the commercial importance of the town began declining. Absence of modern facilities has been a major factor causing for the diversion of cargo to Cochin port. Alleppey which is the nerve centre of coir, seafoods and spices trade has ample export cargo to be offered to the ship owners. In that case the port workers would have also been benefited. Most of the coir and spices export houses have been established in Alleppey and they would be glad to ship their cargo from Alleppey port instead of taking it to Cochin.

Viewing these various important and urgent problems and needs of the Alleppey port and as per the suggestions of the Director of Ports, the State Government in their Order G.O. (Rt.) No. 1906/78/DO., dated 21-10-1978 had directed the Bureau to conduct a traffic potential survey of the Alleppey port.

#### Objectives of the Survey

The objectives of the survey were : (i) to study the existing facilities of the Alleppey port, (ii) to assess the traffic potential of the port both in the past and in the present, (iii) to make an appraisal of its traffic means for developing the port traffic, (iv) to make an exhaustive enquiry into the facilities of the Alleppey port which is likely to command a hinterland region stretching from Aroor Bridge in the north to Kayamkulam to the south and Peermade in the east.

A comprehensive list of manufacturing units of export oriented products, exporters and importers was prepared. Detailed field enquiry was carried out among about 400 establishments in the hinterland region through prescribed schedules meant for the collection of data relating to current production, future production



plans, current and potential exports, quantity and value of exports to various countries and other States within India, quantity exported through Cochin, Alleppey and other ports, relative advantages and disadvantages of Cochin and Alleppey ports. Suggestions for the improvement of Alleppey port and the probable quantity that would be exported through Alleppey port under developed conditions, etc., were also collected from manufacturers, exporters and importers.

Schedule I—Traffic Potential Survey of Alleppey Port—Manufacturing establishments.

Schedule II—Traffic Potential Survey of Alleppey Port—Exporters.

Schedule III—Traffic Potential Survey of Alleppey Port—Importers.

Besides, details regarding the quantity and value of the inward and outward traffic through Aroor Checkpost for the two years 1974-75 and 1977-78 have also been collected so as to assess the trend in the movement of goods meant for import or export through Cochin and at the same time passing through Alleppey, which could also be considered for handling at Alleppey port under developed conditions. The period of the survey was eight months.

The field work was conducted by four Investigators and two Inspectors under the direct supervision of the Special Officer appointed for the purpose. The overall supervision of the conduct of the investigation was entrusted with the Joint Director (Co-ordination) who was assisted in these efforts by the Assistant Director (Export-Import Statistics.)

As the second stage in the survey, Officers from the Bureau headquarters along with the Special Officer contacted important personalities like the District Collector, Port Officer, Municipal Chairman, the President and Secretary of the Chamber of Commerce, important exporters of various commodities and held discussions with them on the various aspects of export, import and the development of the Alleppey port so as to have their considered views and suggestions in the matter. A special meeting of the Chamber of Commerce at Alleppey was convened for discussions relating to port development and connected matters, at the instance of the survey team.

## II. HISTORIC IMPORTANCE OF ALLEPPEY PORT

Alleppey Port is an intermediate port equidistant from the Cochin port and Neendakara port (about 70 kms.). There is a mud bank off the coast of Alleppey. In size and shape the mud bank resembles a parabola having a base of about 6 to 8 kms. and a sea-ward projection of about 3 to 5 kms. The bank has the property of tranquilizing the sea over it in the roughest monsoon weather. There is a tendency for the mud bank to move up and down towards the coast within certain limits. The movement is caused by exceptional storms in the sea and abnormal discharge from the backwaters. The anchorage position for the vessels depends upon the position of the mud bank which stabilises only after the break of the monsoon. The general anchorage is about 3 kms. off the shore. From time immemorial this mud bank has been used by sailing vessels as a perfectly safe anchorage.

The portion relating to the Alleppey port as reported in the Gazetteer of Alleppey district is given below :

“There is a pier 1270' long fitted with two steam cranes, one electric crane and one hand crane besides eight cargo stages for handling cargo and such other items. During south-west monsoon from about the middle of May to middle of August, the port is normally closed. Steamers however continue to call at or near the port when weather conditions permit and the mud bank is sufficiently developed to afford smooth water for shipping operations. The port normally functions for a period of eight months from September 15th to May 15th. The approaches to the port are free from any outlying danger. The lighthouse at the Port when viewed at a distance gives a single beam showing one flash in every 15 seconds. The light is exhibited from sunset to sunrise, the height of the centre lantern being 113 feet above high water and range of visibility is 16 miles. Another aid is a light exhibited throughout the night from the pier and of Alleppey port. Messages from steamer to port and vice versa are received and transmitted by light signalling arrangement at the Port”.

Alleppey was founded as a port town and a commercial centre by the sagacious Dewan Raja Kesava Das with an instinctive foresight. The very position of the place between the Arabian Sea in the west and the backwaters in the east prompted the Dewan to select the spot for the development of a port town. To familiarise the local people in trade and commerce the Dewan invited three enterprising Gujarathi families of business men and afforded them all facilities to settle down and to organise the trading activities. Consistent with the commercial and industrial activities of the town, Bank of Madras established an important branch at Alleppey to finance the trading community. The European firms made Alleppey their principal headquarters, next only to Bombay in view of the availability of raw materials like coir yarn, spices, etc., which could find an easy market in foreign countries. To co ordinate and regulate the multifarious civic activities in the rapidly expanding town, a Town Improvement Committee was first constituted in 1895. With the limited powers at its disposal it mobilized all available resources to give a new look to the face of the town. This was followed by the municipal administration established in 1920, under the Municipal Regulation of that year. Alleppey reached the zenith of its glory in the thirties of the century. A first rate port with natural facility of a mud bank, pier and godowns, lighthouse, signal stations, traveller's bungalows, beautiful residential bungalows, children's park, a recreation ground and beautiful sea shore capable of vast improvements, completed the picture of the original Alleppey port town. According to Lord Curzon, one of the eminent Viceroys of India, Alleppey was the 'Venice of the East'.

Alleppey flourished for many years commercially. Alleppey was the only commercial centre in the erstwhile Travancore State where the entire hill produce like pepper, ginger, cardamom, etc., were marketed.



The following table shows the shipping trade of the port of Alleppey from 1949-50 to 1973-74.

SHIPPING TRADE OF THE PORT OF ALLEPPEY (1949-50 to 1973-74)

Official year	No. of vessels		Total tonnage	Port dues	Landing and Shipping dues
	Steamers	Country Crafts			
				Rs.	Rs.
1949-50	202	34	508597	19644	16555
1950-51	150	36	423559	16420	20853
1951-52	109	12	304884	11265	12438
1952-53	134	42	415780	24422	14493
1953-54	120	31	504135	83545	13020
1954-55	131	27	551732	71791	13122
1955-56	104	20	456540	74118	12585
1956-57	99	17	406126	61047	14918
1957-58	140	7	570090	96170	13290
1958-59	185	6	715421	114965	24048
1959-60	183	19	756577	126501	28780
1960-61	157	13	566939	109643	23504
1961-62	153	3	650998	121743	38083
1962-63	145	5	635216	125272	32967
1963-64	130	..	561164	105941	30947
1964-65	121	..	570686	93413	42958
1965-66	101	..	424485	76613	37651
1966-67	99	..	430677	82460	19076
1967-68	102	..	435809	99536	17126
1968-69	90	..	384702	63990	46662
1969-70	64	..	308951	80138	30600
1970-71	40	..	178273	38190	35711
1971-72	36	3	1,1770	33760	28101
1972-73	31	..	132861	37042	21738
1973-74	16	..	58104	16680	28905

Source :—Report of the Travancore Chamber of Commerce 1973-74

This table reveals the deterioration in the handling of goods at Alleppey over the years. During the year 1949-50, 202 steamers and 34 country crafts with a tonnage of 508597 called at the port while during the year 1973-74 only 16 steamers (and no country craft) called at the port, the tonnage being 58104 only. It could be seen that during the year 1959-60 Alleppey port had a shipping trade to the tune of 7.57 lakh tonnes and the port dues came upto Rs. 1.27 lakhs.

### III. CAUSES OF DOWNFALL IN THE SHIPPING TRADE AT ALLEPPEY

The industrial importance of Alleppey started deterioration with the decline of the coir industry which once dominated the industrial sector of Alleppey. The gradual withdrawal of foreign entrepreneurs from the large coir factories coupled with the labour legislations providing enhanced wages to workers which the industry could not afford to bear, led to the withering away of large factories from the town into smaller units in the suburban areas. The annual exports of coir and coir goods from India declined from 75000 tonnes during 1950 to hardly 40000 tonnes during the last few years. This had also adversely affected the port.

Alleppey is not connected by rail and the nearest railway station is Kayamkulam (47 kms.). But steps have already been initiated to link Alleppey with Ernakulam by rail and work has been started in this regard.

Rapid growth of the Cochin port as an all weather fullfledged port, also affected the economic structure of Alleppey to a great extent. Cochin is the finest natural harbour in the country and the 4th major port in India accounting for 12.9% of total imports and 5.3% of total exports to terms of total trade in quantities. Even during the heaviest rains, vessels can be berthed inside the harbour and their operations can be carried on. Hence during the monsoon, ships come to Cochin instead of other minor ports. The net work of inland waterways from the port provides a cheap means of natural transport. The railway and road system branching off from Cochin connect the port with the entire southern region.

Alleppey which was once a very busy centre of commerce has now been relegated to a position of an unimportant port. Shippers prefer to bring their cargo by trucks to Cochin than to Alleppey which is at a distance of about 65 kms. This has undoubtedly affected the employment of port workers, prosperity of the town and the revenue of the port. The trading community at Alleppey appears to have been reconciled to the dwindling importance of the port but is anxious to improve the port conditions. The establishment of a railway link connecting central Travancore to the Cochin harbour encourages the shifting of trade from Alleppey to Cochin where better facilities for shipment are provided. Integration of Travancore and Cochin States and the opening of the Aroor Bridge removed the barriers and facilitated the diversion of traffic to the all weather port of Cochin. Consequently the quantity of cargo handled at the Cochin port has increased from 13.7 lakh tonnes in 1950-51 to 51.7 lakh tonnes in 1977-78. The following table presents the traffic handled through the port of Cochin.



## TRAFFIC HANDLED THROUGH THE PORT OF COCHIN

Year	Traffic handled through Cochin Port (tonnes)		
	Import	Export	Total
1950-51	1115765	252947	1368732
1955-56	1240369	394057	1634426
1960-61	1621261	387408	2008669
1965-66	2412763	459115	2871878
1970-71	3447466	1392054	4839520
1975-76	3320811	937092	4257903
1976-77	3570132	1197425	4767557
1977-78	3925411	1248955	5174396

Source: Cochin Port Administration Report, 1977-78.

At the same time the shipping trade at Alleppey port which was 7.57 lakh tonnes in 1959-60 has declined practically to 'nil' today. While 202 steamers and 34 country crafts called at the port in 1949-50, no steamer visited the port in 1977-78. The rapid growth of the Cochin port with all the modern facilities for handling the goods, the opening of the Aroor Bridge, transport connections to Cochin by road, rail, canal and air extending its hinterland beyond limits coupled with the dissatisfaction of the exporters consequent on the frequent labour unrest accelerated the transfer of more and more shipping activities to Cochin leaving aside the Alleppey port as a neglected one.

## IV. THE NEED FOR DEVELOPING THE ALLEPPEY PORT

Alleppey port has got a strategic position on the west coast of India. Recently the dredger, 'Lord Wellington' sank at the vicinity of the outer buoy of Cochin harbour and it was feared that the mishap could completely block the entrance channel and paralyze the port operations. Such mishaps could not be ruled out in future also and it would be convenient and helpful if an alternate facility is available nearest to Cochin port. Alleppey port would be the most suitable in such exigencies. Congestion of traffic is posing a great problem of Cochin port and it would find it convenient to divert part of its traffic to a nearby port having adequate facilities. Diversion of traffic will depend upon a number of factors like the adequacy of the new port facilities to handle particular types of cargo, quality of service offered, efficiency of operation, shipping opportunities available, transportation linking the port with its hinterland, etc. It cannot be denied that there is every possibility of Ernakulam channel getting cluttered up by Naval Vessels and the traffic connected with the shipyard. The position will become acute when the Cochin Naval Base is strengthened and the Cochin shipyard is fully commissioned. There are not enough wharf berths available at Cochin Port. All these necessitate diversion of a percentage of vessels from Cochin to Alleppey.

The estimates of traffic through the Cochin port till 1995-96 according to the traffic survey conducted by the National Council of Applied Economic Research, New Delhi, are furnished below:

## TRAFFIC POTENTIAL THROUGH THE COCHIN PORT

(Lakh tonnes)

	1977-78 (Actual)	Traffic estimates			
		1982-83	1987-88	1992-93	1995-96
Foreign imports	34.79	43.41	44.04	62.30	72.42
Coastal imports	4.46	5.47	5.92	6.36	6.94
Total imports (A)	39.25	48.88	49.96	68.66	79.36
Foreign exports	4.03	5.08	6.06	8.60	9.74
Coastal exports	8.46	3.86	0.94	0.98	4.09
Total exports (B)	12.49	8.94	7.00	9.58	13.83
Total traffic (A+B)	51.74	57.82	56.96	78.24	93.19

In order to cater to the emerging traffic the port has to keep pace with the changes taking place in the shipping world and provide facilities according to the changing needs of the trade while ensuring maximum efficiency in operation for faster turn round of ships and optimum cost in operation. For minimising congestion at the Cochin port, the only way is to divert some of the cargo earmarked for the State to be unloaded at an adjacent port which is Alleppey. The above position simply speaks the need for the development of Alleppey port.

From the strategic stand point also, the improvement of Alleppey port needs special attention. Already at Cochin harbour there are the shipyard and the Defence installations and the nearby Oil Refinery. In the event of a National Emergency such as the India-Pakistan War in 1965 and 1971, Cochin Port could be a vital target for enemy action which might render it unfit for shipping operations. During such an emergency Alleppey could



be readily commissioned into operation as an alternate port, if only, it is improved upon and developed into a fullfledged all-weather port capable of receiving all merchant marine and other ships of large tonnage through out the year.

Fish canning industry has its concentrations in and around the coast of Alleppey and palletisation of cargo will give an impetus to bulk export of canned fish, shrimps and other marine products. Alleppey has a rich hinterland endowed with a variety of exportable merchandise such as pepper, ginger, rubber, tea, cashew kernels and coir and coir products. Alleppey monopolised the handling of coir and coir products for many years and still the position holds good in respect of a major port of these commodities.

Economic condition of the town is very poor because of the poor employment opportunities. The deterioration of the coir industry due to the unhealthy labour attitude and withdrawal of foreign entrepreneurs and the partial non-functioning of the port were the main factors which contributed to the economic backwardness of the town. So a concerted planned action is needed to save the district from its deplorable condition. The activation of the port may help to a large extent in restoring the past glory of the town and bring prosperity to its inhabitants.

Thus Alleppey port deserves to be raised to the status of an independent entity on its own merits (1) the prominent position it enjoys in respect of export of coir and coir products; (2) the possibilities in commanding an increasing volume of export merchandise from the rich hinterland especially hill products, such as, rubber, pepper and ginger; (3) its hinterland has vast potentialities in fisheries and agriculture; (4) its suitability to occupy the position of an alternate port in time of emergency; (5) its capacity to be a stand by port to avoid congestion at Cochin.

With the extensive development of the infrastructure and prospects of handling a sizable volume of goods Alleppey would accord ample opportunities for expediting transportation of goods. The completion of the coastal railway line linking Alleppey with Ernakulam in the north and Kayamkulam in the south which is of vital importance in this connection will facilitate the transportation of goods from the adjacent hinterland to Alleppey at a cheap rate. The completion of the bridges in the road connecting Changanacherry and Alleppey will give a new impetus to the flow of goods, especially hill produces from taluks like Changanacherry, Kanjirappally and Peermedu to Alleppey which will open up potentialities of export of these goods from Alleppey port to a considerable extent. The economy of Alleppey can be given a boost only if the Alleppey port is allowed to revive its glorious past.

## V. THE HINTERLAND OF ALLEPPEY PORT

The objective of the traffic potential survey of Alleppey port is to estimate the volume of traffic likely to be handled at the port if it is developed into an all weather port. The volume of traffic at any port is related to the geographical extent and the economic development of its hinterland. Alleppey port's hinterland had been delineated in the present project scheme as those regions comprising of Alleppey district in full Changanacherry and Kanjirappally taluks in Kottayam district and Peermedu taluk in Idikki district. But for the recent decisions to develop the Neendakara port a few taluks of Quilon district could also have been considered as the hinterland of Alleppey port.

In this chapter the following principal features of the economy of the hinterland are briefly reviewed as they have an important bearing on the traffic potential of Alleppey port—topography, climate, population, land utilisation, etc.

### Area and Population

The hinterland covers an area of 3755.15 sq. kms. having a population of 2710270 as per 1971 census. The density of population per square km. is 722. Taluk-wise area and population are presented in the following table.

AREA AND POPULATION OF THE HINTERLAND (1971 CENSUS)

Taluk	Area (sq. km.)	Population	Density/sq km.
Ambalapuzha	178.7	329661	1843
Chengannur	201.2	232218	1154
Karthikappally	234.7	330506	1408
Kuttanad	266.0	187698	706
Mavelikkara	288.8	323277	1114
Shertallai	320.4	379626	1185
Thiruvella	44.2	342736	996
Changanacherry	262.0	2 5347	1013
Kanjirappally	351.3	172860	491
Peermedu	1307.8	146841	112
Total	3755.1	2710270	722

### Situation:

Alleppey district lies between north latitude 9° - 05' and 9° - 52' and east longitudes 76° - 17' and 76° - 48'. It is bounded on the north and north-east by Ernakulam and Kottayam districts respectively, on the east and on the south by the Quilon district and on the west by the Arabian Sea. The entire area of the district lies in the lowland and the midland divisions. This is the only district in Kerala having no area under highlands



Changanacherry and Kanjirappally taluks are in Kottayam district which lies between north latitudes  $9^{\circ}-15'$  and  $10^{\circ}-21'$  and east longitudes  $76^{\circ}-22'$  and  $77^{\circ}-25'$ . Changanacherry the southernmost taluk of the district lies in the midland region, Kanjirappally lies east of Kottayam and Changanacherry taluks. It is in the hilly tract while Peermedu taluk in Idikki district is entirely in the highland region.

### Rivers

Three important rivers which flow through Alleppey district are Manimala, Pamba and Achancoil. Manimala originates from Methavara hills in the Peermedu taluk. This river is 92 kms. long and is navigable to a length of 55 kms. Pamba river is formed by the rivers Pamba Aar, Kakki Aar, Arudai Aar, Kakkad Aar and Kallar, which have their origins in the Peermedu plateau. The catchment area of the river is 1976.17 sq. kms. and it has a navigable length of 74 kms. Achancoil river originates from Ramakkal Teri and Rishimalai. It has a length of 128 kms. till its confluence with Pamba river. The catchment area of the river is 1155 sq. km. and it has a navigable length of 32 kms.

### Backwaters

Vembanad is the largest backwater in the State the average width being about 3.22 kms. length 83.87 kms. and area 204.61 sq. kms. It forms the western boundary of Vaikom, Kottayam and Changanacherry taluks. The Vembanad lake is stretching from Alleppey to Cochin. The Pamba, Moovattupuzha and Meenachil rivers empty themselves into this lake. 'Pathiramanal' a beautiful island with coconut plantation and luxuriant vegetation is situated in the centre of this backwater. Kayamkulam lake second important lake in Alleppey district is 30.4 kms. long with an average breadth of 2.5 kms. It is very shallow. A part of this lake has been reclaimed for paddy cultivation.

### Soil

Soil of Alleppey district is classified as sandy, peaty alluvial and laterite. The alluvial soil occurs in the western portions of Changanacherry taluk. Kanjirappally taluk and western portion of Peermedu also contain alluvial, peaty and laterite soils. The forest and hilly soil occur in the western sector of Peermedu taluk.

### Climate

The climate in Alleppey district is moist and hot in the coast and slightly cooler and drier in the interior of the district. The district has 4 seasons, the dry weather, hot weather, south-west monsoon and north-east monsoon. The monthly temperature varies approximately between  $22^{\circ}\text{C}$  and  $34^{\circ}\text{C}$ .

The climate in Changanacherry and Kanjirappally taluks is moderate.

### Mudbank

The mudbanks lie along the beach of Alleppey district but extend some miles seaward and afford smooth-water anchorage for ships during the monsoon. They are not stationery but move along the coast within a range of 12 to 15 miles from Alleppey.

### Rainfall

Monthly distribution of rainfall at selected centres in the hinterland is furnished in the subjoined table.

### Literacy

In the case of literacy, Alleppey district stood first (70.44%) among the districts according to 1971 Census. 67.72% of the population was literates in Kottayam district while the State average was 60.42%.



MONTHLY DISTRIBUTION OF RAINFALL AT SELECTED CENTRES IN THE HINTERLAND 1971 AND 1975

Centres

Month	Aru- kutty	Sher- tallai	Allep- pey	Ambala- puzha	Thuru- vella	Chengan- nur	Harip pad	Mavelik- kara	Kayam- kulam	Kanjirap- pally	Changana- cherry	Kumi- Taluk	Peermedu Residency
1971													
January	..	101.6	106.6	..	12.2	..	30.5	65.1	..	..	..	..	..
February	..	58.4	68.2	..	..	..	18.2	16.0	26.4	..	7.0	81.8	..
March	35.0	..	45.2	..	15.0	..	17.8	15.0	..	..	4.0	51.1	..
April	62.7	60.9	128.4	114.3	82.4	..	228.7	107.0	78.6	..	65.5	119.9	..
May	517.8	283.2	470.8	..	338.2	..	525.7	412.0	79.6	..	222.7	322.8	..
June	512.8	702.5	790.3	452.0	761.8	..	1002.9	..	437.8	..	771.0	1205.5	..
July	..	..	666.4	..	532.6	..	668.5	..	131.1	..	454.7	996.6	..
August	..	297.1	379.0	..	395.0	..	449.6	435.0	148.8	..	406.3	691.0	..
September	367.7	113.9	340.2	..	177.1	..	507.9	202.0	295.4	..	344.0	686.9	..
October	126.1	154.8	135.2	..	153.8	..	160.0	..	188.7	..	..	320.8	..
November	..	1240.7	53.4	..	4.2	..	27.9	..	73.7	..	..	53.6	..
December	39.6	43.2	59.4	..	18.5	..	58.4	..	27.6	..	64.6	130.5	..
1975													
January	..	..	..	..	32.0	..	..	..	..	..	30.0	..	..
February	..	101.6	175.8	..	31.0	..	58.5	..	..	..	25.0	16.0	..
March	..	139.7	94.2	..	69.0	..	180.4	134.0	..	..	46.0	51.4	..
April	..	130.9	232.2	..	248.0	..	328.0	269.0	36.4	..	250.0	56.5	..
May	..	73.4	299.0	..	11.0	..	320.1	207.0	..	..	133.0	111.4	..
June	..	693.1	786.6	..	451.0	..	844.2	..	554.7	..	..	1100.6	..
July	..	506.7	593.8	..	247.8	..	751.6	..	499.0	..	447.0	581.5	..
August	..	556.2	515.0	..	779.3	..	975.6	448.5	457.3	..	..	1660.3	..
September	..	407.6	468.6	..	986.6	..	469.9	420.0	378.0	..	..	712.1	..
October	..	574.9	501.2	..	764.5	..	797.6	503.5	445.0	..	598.4	604.2	..
November	..	..	275.0	..	107.3	..	330.5	227.5	..	..	325.0	468.4	..
December	..	15.2	127.6	..	26.4	..	119.4	13.0	..	..	62.2	18.9	..

Source - Statistics for Planning 1977.



Classification of area of the hinterland is furnished below :

CLASSIFICATION OF AREA (1977-78) OF THE HINTERLAND (PROVISIONAL ESTIMATES)  
(Area in hectares)

	Hinterland		State	
	Area	Percentage to total	Area	Percentage to total
1. Total geographical area	375510	100.00	3885497	100.00
2. Forest	69282	18.45	1081509	27.82
3. Land put to non-agricultural uses	38377	10.22	260388	6.70
4. Barron and uncultivable land	6309	1.68	78837	2.03
5. Permanent pastures and grazing land	1164	0.31	16095	0.42
6. Land under miscellaneous tree crops not included in net area sown	4093	1.09	72668	1.88
7. Cultivable waste	11603	3.09	115726	2.93
8. Fallow land other than current fallow	1502	0.40	22264	0.57
9. Current fallow	2741	0.73	37409	0.96
10. Net area sown	240439	64.03	2200601	56.64
11. Area sown more than once	103753	27.63	732849	18.86
12. Total cropped area	344192	91.66	2933450	75.50

**Area Under and Production of Important Crops in the Hinterland Region**

The important crops in the region are rice, pulses, sugar-cane, pepper, ginger, turmeric, arecanut, coconut, cashewnut, tapioca, tea, coffee, rubber, etc. Area under and production of these crops for the year 1977-78 are furnished below :

AREA UNDER AND PRODUCTION OF IMPORTANT CROPS IN THE HINTERLAND 1977-78

Name of crop	Area (Hectares)	Production (M. T.)
Rice	97042	171471
Pulses	1130	476
Sugar-cane	2055	10668
Pepper	13355	1664
Ginger	847	2500
Turmeric	181	158
Arecanut (million nuts)	3402	392
Coconut ( " )	67120	314
Cashewnut	3537	2678
Tapioca	28674	435467
Tea	601	218
Coffee	566	214
Rubber	32773	20913

Production of rice in the hinterland during the year 1977-78 was 171471 M.T. the area being 97042 hectares. This production was about 13.2% of the total production of rice (1294635 M.T.) in the State. Pulses contributed about 3% of the State production i.e. the production of pulses in the hinterland was 476 M.T. while that in the state was 16091. Production of sugarcane was 10668 M.T. which worked out to 28.2% of the State production. Similarly 8.2% of pepper was produced in the hinterland. 392 million arecanuts was the production in the hinterland, while that in the State was 10548 million. Production of tapioca in the area worked out to 10.4% of the State production. 32773 hectares of area was under rubber, the production being 20913 M.T.

**Marine fish landings**

Details regarding marine fish landings during the year 1978 in Alleppey district are given below. The total marine fish landings in Alleppey district during the year 1978 was 41914 M.T. out of which 18789 M.T. were 'Oil Sardine'.

Name of species	Quantity (M. T.)
Slasmobranches	731
Cat fishes	727
Oil sardine	18789
Lesser sardine	7509
Ancheviella	2757
Perches	1554
Scianidae	732
Ribbon fish	236
Leiognathus	558
Pomfrets	412
Mackeral	2668
Soles	427
Penacid prawns	1972
Miscellaneous	2842
<b>Total</b>	<b>41914</b>



### Industrial base of the hinterland

Traditional industries play an important role in the industrial set up of the hinterland. Main industries (coming under the Annual survey of Industries, ie. 2 m (i) and 2 m (ii) in Alleppey district are coir and coir products, Manufacture of edible oils, canning of fish, saw mills, printing of books and journals, cashew processing, manufacture of allopathic medicines, manufacture of tiles and bricks, manufacture of transformers and electric motors etc. In the hinterland besides this district, Changanachery taluk contributes some rubber factories and Peermedu taluk contributes some tea factories. Number of units, number of workers, output and value added by manufacture of the factories coming under the above industries in Alleppey district are furnished below:

	Alleppey district		State		Percentage of the district total to the State total	
	1974-75	1975-76	1974-75	1975-76	1974-75	1975-76
Number of units in the industries	146	132	2318	2239	6.30	5.90
Number of workers	10808	10646	208023	188987	5.20	5.64
Value of output	3498.51	4141.14	77993.86	85835.75	4.49	4.82
Value added by manufacture	540.31	765.17	15654.26	14930.06	3.46	5.13

#### NO. OF UNITS, NO. OF WORKERS AND VALUE OF OUTPUT IN IMPORTANT INDUSTRIES IN ALLEPPEY DISTRICT

Name of Industry	Number of units		Number of workers		Value of output (Rs. in lakhs)	
	1974-75	1975-76	1974-75	1975-76	1974-75	1975-76
Coir and coir products	55	45	1865	1682	1224.02	1334.05
Manufacture of edible oils	18	13	50	145	207.84	498.33
Canning of fish	12	5	185	273	301.46	133.08
Saw Mills	8	7	354	288	26.67	22.29
Printing of books and journals	6	3	90	47	14.54	9.27
Cashewnut processing	5	5	5564	4826	377.70	327.27
Manufacture of allopathic medicines	4	3	104	194	34.79	190.27
Manufacture of tiles and bricks	4	3	100	63	3.22	9.72
Manufacture of transformers and electrical motors	4	..	349	..	109.85	..
Manufacture of hollow glassware	3	..	424	..	21.52	..
Other industries	27	48	1722	3128	1173.90	1616.96
Total	146	132	10808	10646	3498.51	4141.24

### Workers by Industrial category

Table showing the number of workers under various categories (1971 Census) relating to the hinterland is given below:

#### WORKERS UNDER VARIOUS CATEGORIES (1971 CENSUS)

Category	Number of persons	Percentage to total workers
Total workers	772171	100.00
1. Workers as cultivators	138033	17.88
2. Agricultural labourers	228676	29.61
3. Livestock, forestry, fishing, plantations, orchards and allied activities	62570	8.10
4. Mining and quarrying	1863	0.24
5. (a) Household industry	45847	5.94
(b) Other than household industry	73009	9.46
6. Construction	11841	1.53
7. Trade and Commerce	70184	9.09
8. Transport, storage and communications	28600	3.70
9. Other services	111548	14.45
Total Non-workers	1938099	..

Maximum number of workers comes under the category Agricultural Labourers (29.61%) while minimum number is under the Mining and Quarrying sector (0.24%)

### VI. PRESENT PATTERN AND VOLUME OF TRAFFIC AND THE TRAFFIC POTENTIAL OF THE ALLEPPEY PORT

In the erstwhile State of Travancore, Alleppey was the only port of exit on the Malabar Coast. Spices, tea, coir and coir products and other traditional items were shipped through this port. The adjoining table shows the foreign exports and imports of the Alleppey port from 1957-58 to 1978-79.



FOREIGN EXPORTS FROM ALLEPPEY PORT

(Value : Rs. in Lakhs)

Commodity	Unit	1957-58		1960-61		1965-66		1970-71		1971-72		1972-73	
		Q	V	Q	V	Q	V	Q	V	Q	V	Q	V
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1. Cardamom	M.T.	54	163	..	..	..	..	..	..	..	..	4	1.17
2. Cashew kernels	"	..	..	..	..	..	..	..	..	..	..	87	7.92
3. Coffee	"	12210	93.75	12453	112.90	15110	205.67	3526	85.27	6414	148.85	5251	133.89
4. Coir Yarn and fibre	"	7738	118.16	6270	96.68	4008	83.58	754	25.72	1038	42.19	1192	48.18
5. Coir products	"	..	..	..	..	2	1.10	..	..	..	..	1	0.03
6. Cardage and rope of vegetables	"	..	..	..	..	..	..	..	..	5	1.00	5	0.96
7. Fish and prawns	"	27	0.25	290	4.51	19	0.56	13	0.85	..	..	10	0.39
8. Ginger	"	258	6.63	243	6.32	41	0.14	..	..	..	..	1	0.02
9. Jute and Jute products	"	2613	6.17	6916	13.62	..	..	..	..	..	..	..	..
10. Manioc meal	"	..	..	..	..	..	..	..	..	12600	8.38	..	..
11. Metals, minerals and Or.s	"	..	..	..	..	..	..	..	..	..	..	..	..
12. Oilcake	"	1748	34.06	3402	150.67	3467	138.60	509	47.43	144	10.62	1526	108.62
13. Pepper	"	390	2.68	525	7.54	999	17.45	175	4.15	..	..	..	..
14. Turmeric	"	..	..	..	..	..	..	..	..	..	..	..	..
15. Rosewood	"	..	..	..	..	..	..	..	..	..	..	..	..
16. Other kinds of wood	"	..	9.44	..	3.39	..	0.95	..	0.06	..	1.02	..	1.28
17. Sundries	"	..	..	..	..	..	..	..	..	..	..	..	..

FOREIGN EXPORT FROM ALLEPPEY PORT—(Contd.)

Commodity	Unit	1973-74		1974-75		1975-76		1976-77		1977-78		1978-79	
		Q	V	Q	V	Q	V	Q	V	Q	V	Q	V
(1)	(2)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1. Cardamom	M.T.	0.05	0.09	..	..	..	..	..	..	..	..	..	..
2. Cashew kernels	"	78	11.13	..	..	..	..	..	..	..	..	..	..
3. Coffee	"	148	17.81	..	..	..	..	..	..	..	..	..	..
4. Coir Yarn and fibre	"	6402	179.25	..	..	2266	N.A.	..	..	562	N.A.	2685	N.A.
5. Coir products	"	800	34.06	12.84	34.67	406	..	..	..	733	..	91	..
6. Cardage and rope of vegetables	"	..	..	..	..	..	..	..	..	..	..	..	..
7. Fish and prawns	"	28	6.90	..	..	..	..	..	..	..	..	..	..
8. Ginger	"	18	1.04	..	..	..	..	..	..	..	..	..	..
9. Jute and Jute products	"	..	..	..	..	..	..	..	..	..	..	..	..
10. Manioc meal	"	..	..	..	..	..	..	..	..	..	..	..	..
11. Metals, minerals and Ores	"	..	..	..	..	..	..	..	..	..	..	..	..
12. Oilcake	"	1606	133.51	..	..	..	..	..	..	..	..	..	..
13. Pepper	"	27	1.02	..	..	..	..	..	..	237	N.A.	..	..
14. Turmeric	"	..	..	..	..	..	..	..	..	..	..	..	..
15. Rosewood	"	..	..	..	..	..	..	..	..	..	..	..	..
16. Other kinds of wood	"	..	..	..	..	..	..	..	..	..	..	..	..
17. Sundries	"	..	..	..	..	..	..	..	..	..	..	..	..

Industrial base of the hinterland



## FOREIGN IMPORTS INTO ALLEPPEY PORT

(Value : Rs. in Lakhs)

Unit	1957-58		1960-61		(Nil for all years)
	Q	V	Q	V	
Copra M.T.	388	3.96	753	7.57	

## FOREIGN IMPORTS INTO ALLEPPEY PORT—(Contd.)

Unit	1970-71		1971-72		1972-73		1973-74		1974-75		1975-76		1976-77	
	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V
Paddy, rice wheat, etc. foodgrains	11496	134.55	..	..	3008	55.00	16686	150.66	26161	256.38	5546	N.A.	9750	N.A.

The important items of export handled through the port under favourable conditions were coir and coir products, pepper, cashew kernels, coffee, marine products, ginger, cardamom, turmeric, tea, rubber, etc. The imports were foodgrains and copra. From 1973-74 onwards the traffic handled through the port is almost negligible. The products of the hinterland were diverted to the Cochin Port most probably by road, water or rail but reliable data on goods routed through road, water and rail are not available. But details collected from the sales tax checkpoint at Aroor give an idea about the movement of goods through road and their quantity meant for export or import via the port of Cochin.

From the checkpoint data it can be seen that the diversion of such commodities from Alleppey to Cochin port via all means of transportation could be substantiated. All these goods could therefore be handled at Alleppey port under developed conditions. This diversion has the additional advantages of minimising transportation cost.

Aroor salestax checkpoint is situated in between Alleppey and Cochin. It can normally be inferred that commercial goods moving mostly by lorry traffic via this checkpoint are items of export from Cochin port and import through Cochin to destinations in south. Since most of these goods were once handled by the Alleppey port the figures will reveal the trend in the shift of export-import transactions from Alleppey to Cochin. The details regarding the quantity and value of the inward and outward traffic of Aroor check post for the two years 1974-75 and 1977-78 have been collected to study the traffic trend which has got a bearing over the export-import activities of the two ports over a period of time. The figures indicate a definite increase in most of the goods meant for export via Cochin. The tables XVI, XVII in the appendix give the figures for the years separately. Only the important items have been listed.

During 1974-75 about 143036 tonnes of commercial inward goods were handled through Aroor check post while the tonnage of these goods declined to 47202 during 1978-79. The decline is mainly due to the decrease in the import of raw cashewnut. The import of cashewnut for these two years 1974-75 and 1978-79 were 141666 tonnes and 5200 tonnes respectively. During 1974-75 cashewnut, cotton and paper and newsprint were the main items of import while during 1978-79 the items were coconut, paper and newsprint, fertilisers, cotton, cashewnut machinery, coal, steel and steel products, M. S. goods, carbon black etc. Besides these, scooter (360 Nos.), liquor, plywood, staple wire, etc. the quantities of which could not be assessed also moved through the checkpoint.

Similarly the main items of outward traffic meant for export, through the checkpoint were coir and coir products, cashew kernels, rubber, marine products etc. All items except cashew kernels, rubber and turmeric showed an upward trend in tonnage in 1978-79. Movement of coir and coir products showed a considerable move up in 1978-79 compared to 1974-75 which indicated a shift of export activities from Alleppey to Cochin. The movement of commercial goods meant for export over these two years passing through the checkpoint were 70698 tonnes and 180837 tonnes. The major portion of these commercial goods can be diverted for import-export operations through Alleppey port under developed conditions and peaceful atmosphere.

As regards the present condition Alleppey port has a rich hinterland endowed with a variety of exportable merchandise such as pepper, ginger, tea, coffee, cashew kernels, marine products, coconut, coir and coir products for which Alleppey enjoys a pre-eminent position. Fish canning industry has concentrations in and around the coast of Alleppey and pallitisation of cargo will give an impetus to bulk export of canned fish, shrimps and other marine products. The entire production in these areas can be shipped through Alleppey instead of Cochin if the conditions of the port are developed.

When we look into the industrial sector of the hinterland, it is seen that industries like coir, cashew, plywood, splints and veneers, rubber and rubber products, chemicals and chemical products etc. have a good number of factories working in good conditions.

By analysing the various details connected with the exports and imports handled through Alleppey and Cochin port, the data collected by contacting the various exporters, importers and manufacturers and the data collected for the two years from the Salestax checkpoint at Aroor it is seen that the main items of import and export which can be handled through the Alleppey port under developed conditions are the following:

**Imports**

Rice and foodgrains (coastal), Coal (coastal), Fertilizers, Cement, Machinery etc. (both coastal and for eign)



## Exports

Marine products pepper, rubber and rubber products coir and coir products, ginger, turmeric cashew kernels, minerals, coconut, coconut oil, copra, oilcake, tapioca and its products plywood, jute and jute products.

## Imports

Rice and foodgrains were imported into the Alleppey port during the last few years. 26160 M. T. of rice and foodgrains were imported into the port during 1974-75. But no import of rice and foodgrains can be expected in future since the policy of Government is to achieve self-sufficiency by enhancing rice production through improved agricultural methods. At present the import of this item is reported to be negligible. But coastal traffic will improve and a coastal import of 20,000 tonnes can be expected by 1992-93.

## Coal

One lakh tonnes of coal is estimated as the import traffic potential (coastal) through Cochin port by 1992-93.\* From this about 20,000 tonnes of coal can be diverted through Alleppey port.

## Fertilizers

Agriculturists are getting used to improved agricultural practices and more and more of them will be attracted to improved cultivation methods under the new development programmes like the 'T or V' of the Agricultural development. Consumption of fertilizers is maximum in Alleppey District (60.3 kg. per hectare in the Alleppey district and 42.4 kg. per hectare in Kottayam district.) At this rate, consumption of fertilizers is likely to be on the increase and it can be expected that around 30,000 tonnes of fertilizers (both coastal and foreign import) will be required over a period of time for the hinterland and the surrounding regions. This could very well be handled by the Alleppey Port.

## Miscellaneous items

This item includes cement, machinery, chemicals, etc. The import of these items is likely to go up with the increasing tempo of industrialisation in the hinterland. The import potential of these items (coastal as well as foreign) may go up to 30,000 tonnes by 1992-93.

The traffic potential of the import items as estimated above is presented in the following table.

### IMPORT POTENTIAL THROUGH ALLEPPEY PORT IN 1992-93

Items	Import Potential (Tonnes)
Rice and foodgrains	20,000
Coal	20,000
Fertilizers	30,000
Miscellaneous items (Cement, machinery, etc.)	30,000
<b>Total</b>	<b>1,00,000</b>

Roughly 1,00,000 tonnes of import potential is expected by 1992-93 through Alleppey port. This import will mainly be coastal. Not much foreign import is expected through Alleppey port. If the conditions of the port are developed a portion of the foreign import of iron and steel, raw cashewnut, etc., can also be diverted from Cochin port and handled through Alleppey port.

### DIVERSION OF FOREIGN IMPORT FROM COCHIN PORT

Items	Import potential through Cochin Port (estimates for 1992-93) (Tonnes)	Diversion of imports which can be handled through Alleppey Port in 1992-93 (Tonnes)
Iron and Steel	56,800	15,000
Cashewnut (raw)	50,000	20,000
<b>Total</b>	<b>1,06,800</b>	<b>35,000</b>

\*Traffic Survey of Cochin Port by National Council of Applied Economic Research.



**Exports**

Table showing the estimates of export traffic through Alleppey Port is given below :

**ESTIMATE OF EXPORT TRAFFIC THROUGH ALLEPPEY PORT***(In Tonnes)*

<i>Items of export</i>	<i>Export Traffic Potential in 1992-93</i>		
	<i>Foreign</i>	<i>Coastal</i>	<i>Total</i>
Marine products	10,000		10,000
Pepper	1,500	..	1,500
Rubber and rubber products	15,000	10,000	25,000
Coir and coir products	38,000	..	38,000
Ginger	3,000	..	3,000
Turmeric	200	..	200
Cashew kernels	2,500	..	2,500
Minerals	10,000	..	10,000
Coconut	..	25,000	25,000
Coconut oil	..	20,000	20,000
Copra	..	10,000	10,000
Oilcake	..	5,000	5,000
Tapioca	..	10,000	10,000
Miscellaneous	5,000	5,000	10,000
<b>Total</b>	<b>85,200</b>	<b>85,000</b>	<b>1,70,200</b>

**Marine products**

This item consists of frozen, canned and dried shrimps, frog legs, etc. During 1975-76, 2,698 tonnes of marine products were contributed by the Alleppey District, i.e. 6.5 per cent of the export handled through Cochin Port. It is estimated that 1,01,000 tonnes of marine products can be exported through Cochin Port during 1992-93. Near about 10,000 tonnes can be the export potential via. Alleppey port by 1992-93.

**Pepper**

It is seen that 3,467 tonnes of pepper had been exported from Alleppey port during the year 1965-66 and the export of the commodity, via., the port gradually declined year by year, till it came to a negligible figure of 16 tonnes in 1974-75. Taking into consideration the production of pepper in the hinterland of the port and the former export figures it is estimated that 1,500 tonnes of pepper could normally be exported from Alleppey port under developed conditions. If conditions improve the port can attract more of the commodity originating in the south, on its way for export through Cochin port.

**Rubber and rubber products**

About 90 per cent of rubber and rubber products exported through the Cochin port originates from Kottayam and Idukki districts. During 1977-78, 37,553 tonnes of rubber was produced in Alleppey and Kottayam districts. Rubber and its products from Alleppey district, Changanacherry and Kanjirappally taluks of Kottayam district and Peermedu taluk of Idukki district can be brought over to Alleppey for export. Near about 92,000 tonnes of rubber are estimated to be exported, via., Cochin by 1992-93. Improved conditions of Alleppey port will definitely attract 25,000 tonnes by way of rubber and its products for export, both foreign and coastal.

**Coir and coir products**

During 1957-58 and 1965-66 export of coir and coir products through Alleppey port were 19,950 and 19,120 tonnes. Slowly the activities at the port began to decline and the export of coir and coir products was diverted to Cochin Port. 38,955 and 52,433 tonnes of coir and coir products were exported through Cochin port during 1975-76 and 1976-77 respectively. On the district-wise origin of exports furnished in the traffic survey reported of Cochin port it is seen that Alleppey contributed 27,273 tonnes of coir products during 1975-76. The coir exporters of Alleppey are of the view that Alleppey could handle the entire export under this item under improved conditions and the export potential could reasonably be put at 38,000 tonnes and this could pick up to 52 or 55 thousand tonnes over a period.

**Ginger**

Near about 3,000 tonnes of ginger are produced in the hinterland of the Alleppey port. It can also be seen that about 3,300 tonnes of ginger passes through the Aroor Check-post which is meant for export, via., Cochin. Reasonably 3,000 tonnes of ginger will be the export potential from Alleppey port over a period of time.

**Turmeric**

Alleppey port had a glorious past in its export activities especially in spices. Turmeric was one of the important items in spices and figures reveal that 999 tonnes were exported through Alleppey port in 1965-66. But production of turmeric in Alleppey and other regions of the hinterland comes only upto 158 tonnes which could normally be expected to be exported, via., Alleppey port if conditions improve. Export potential of this item through Alleppey port over a period of years would be around 200 tonnes.



### Cashew kernels

Figures collected at the Aroor Sales-tax Check-post reveal that 43,977 tonnes in 1974-75 and 27,710 tonnes in 1978-79 moved to Cochin for export, via. Alleppey. But production in Alleppey district together with those in Changanacherry, Kanjirappally and Peermedu taluk has to be taken into account for calculating the export potential of this item from Alleppey. Production from this area is estimated around 3,000 tonnes. Hence it is not reasonable to have wild expectations of diversion of cashew kernel to Alleppey port. Still it can be expected to have a potential around 2,500 tonnes of cashew kernels for export through Alleppey port.

### Minerals

It is seen that deposits of quartz and silica sand occur in the Alleppey district. 45,000 tonnes of mineral sand including ilmenite and rutile is estimated to be the export through Cochin port by 1992-93. Because of its origin in the district and much processing is not required for export of this item it can definitely be concluded that 10,000 tonnes can find its way out, via. Alleppey port.

### Miscellaneous items

Miscellaneous items including jute and jute products, cocoa, rosewood, plywood, cashew shell liquid, fruits, textiles, etc., are expected to be exported through Alleppey port. On a normal side about 5,000 tonnes of foreign and 5,000 tonnes of coastal export can be taken as the export potential of these items over a period of ten years.

Besides these items coastal exports like tapioca, oilcake, copra, coconut, coconut oil, etc., can be exported (coastal) through Alleppey port. Potential of these items is shown in the table given above.

Thus altogether the traffic potential that can be handled through the Alleppey port under developed conditions comes to 3,05,200 tonnes in 1992-93 (details shown below) :

	<i>Tonnes</i>	<i>Tonnes</i>
Import Potential—directly to the Port	1,00,000	} 1,35,000
that can be diverted from the Cochin Port	35,000	
Export Potential—Foreign	85,200	} 1,70,200
Coastal	85,000	
Total Traffic Potential		3,05,200

The traffic potential relating to imports and exports from Alleppey port are based on the traffic projection of Cochin port, production figures of the hinterland and the check-post data from Aroor which give an idea to the extent of diversions of goods from Alleppey to Cochin in the recent past.

To sum up, in mapping out an adequate and equitable strategy of industry and agricultural development, the advantages and disadvantages of the area and region must be taken into consideration. The development of infra-structural facilities must be given the required weightage. The port through which the imports and exports are taking place offers the country an access to raw materials for its industries and market for its manufactured goods in the industrial and agricultural sectors and thus becomes the focal point for development.

In addition to the shipping operations, Alleppey Port should be maintained as a stand by port for Cochin in times of emergency since Cochin port could become a vital target of enemy action. So also Alleppey Port should be considered as an alternative at times of necessity to avoid congestions at Cochin consequent on improved commercial traffic and increased activities of the shipyard and the naval base. Diversions will become necessary and Alleppey is the nearby convenient and alternate port for the purpose. Based on these facts the following recommendations are offered.

### VII. RECOMMENDATIONS

Adequate arrangements should be made for developing the Alleppey Port into a full-fledged major port. The development of the port necessitates the following.

(1) Complete renovation of the pier including extension of length by at least 200 ft. This includes additional number of loading and unloading points and extension of trolley lines to the godowns to reduce workload. At present annual repairs of damaged planks and other things are duly done. This is not sufficient and hence a complete renovation is recommended. Annual regular maintenance of the pier should be insisted.

(2) At present there are only two steam powered cranes which have outlived their utility. These cranes have to be replaced by diesel/electric driven cranes and two more additional cranes with two tonnes capacity capable of handling bagcargo should be installed.

(3) Construction of additional godowns with fool proof security arrangements and trolley lines and renovation of the existing ones.

(4) Providing more trollies with full-fledged port workshop to attend to repairs.

(5) Providing adequate lighterage facilities. At present there is no permanent arrangement in this port for lighters. They are arranged on adhoc basis through contractors. Adequate lighterage should be provided on a permanent basis and also three closed steel barges for transportation of bag cargo. This facility will avoid damage to the cargo as also pilferage which is one of the main complaints raised by the exporters. The number of closed and other barges could be increased simultaneously with the acceleration of the shipping operations.



(6) Protected water anchorage for tugs and lighters should be provided at Alleppey itself. These vessels are usually sent back to Cochin or Neendakara for safe anchorage during the foul seasons. So also as a long term measure safe anchorage could be provided for the fishing crafts also, both mechanised or otherwise, nearby the Alleppey port, which may facilitate the construction of a fishing harbour also. This will ultimately enhance the catch of fish and boost up the export trade of marine products via Alleppey port considerably.

(7) Installation of a V.H.F. radio telephone. The present signalling apparatus is obsolete and hardly caters to the needs of the port or ships at the sea.

(8) Berthing capacity to be improved to cope up with the arrival of traffic.

(9) Provision of adequate staff at the port office to deal with the shipping operations without frequent changes by way of deputation or deployment to other offices.

(10) The establishment of a labour training school or college at Alleppey has been advocated by the public to educate the labour for helping the maintenance of proper atmosphere and cordial relationship between the exporters and the labour.

(11) Improvement in the infrastructure facilities especially the road link between Changanacherry and Alleppey and extension of the proposed rail link to Kayamkulam.

The Alleppey-Changanacherry road link, with the early completion of the three bridges at Pallathurathy, Nedumudy and Muttar, will facilitate easy movement of goods especially the hill produce from the eastern sector of the hinterland to the Alleppey port and boost up the shipping operations there. So also the extension of the proposed rail link from Cochin to Alleppey, to Kayamkulam will connect the entire south with Alleppey by rail which may also help the despatch of commercial goods to Alleppey.

#### TABLES APPENDED

The following tables which are considered to be useful for reference in this connection are appended.

1. Selected indicators of port performance (India)
2. Temperature at Alleppey centre
3. Length of Roads in the hinterland
4. Length of Railway in the hinterland
5. Growth of Literacy in Kerala
6. Mean wind speed (Alleppey & Kottayam Districts)
7. Water Transport Service Statistics as on 1.4-1977
8. Foreign and Coastal cargo handled at the Ports of Kerala
9. Foreign Imports into Alleppey port
10. Foreign Exports from Alleppey port
11. Principal imports at Cochin port for the past 10 years
12. Principal Exports at Cochin port for the past 10 years
13. Cargo handled at the port of Cochin
14. Estimates of import traffic through Cochin port 1975-76 to 1995-96
15. Estimates of Export traffic through Cochin port 1975-76 to 1995-96.
16. Details of outward traffic (Quantity and Value) through Aroor Checkpost for the years 1974-75 and 1978-79
17. Details of Inward traffic (Quantity and Value) through Aroor Checkpost for the years 1974-75 and 1978-79.

#### SCHEDULE I, II & III

**Table I**

#### SELECTED INDICATORS OF PORT PERFORMANCES (INDIA)

Item	Unit	1965-66	1970-71	1974-75	1975-76	1976-77
1. Number of ports	No.	151	168	171	171	171
(a) Major	"	7	8	10	10	10
(b) Intermediate and Minor	"	144	160	161	161	161
2. Ship Traffic (Major ports)						
(a) Sailing vessel visited ports	"	34427	29814	11169	19956	12982
(b) Steamers/MV entered	"	10559	7045	6700	7193	7963
(c) G. R. T. of Steamers/MV	1000 tonnes	85623	59931	64639	72821	77833
3. Cargo traffic	100000 tonnes	..	623	735	725	746
4. Percentage of total overseas traffic carried by Indian Flag Vessels		12.9	19.8	27.8	34.9	41.9
5. Passenger traffic	'00000	1769.7	8739.8	7291.4	4982.1	6099.9
(a) Embarked	"	863.8	7330.5	5642.3	2484.2	3042.5
(b) Disembarked	"	905.9	1409.4	1649.1	2497.9	3047.4
6. Number of persons employed at major ports	'000 No.	106.2	106.6	102.5	101.5	105.7
7. Revenue earned by major ports	'00000 Rs.	5424.0	8122.2	12683.7	17972.3	19801.6
8. Expenditure made at major ports	"	5108.0	7977.6	13276.7	15471.8	17328.6

Source: Basic Port Statistics of India 1976-77.



**Table II**  
TEMPERATURE AT ALLEPPEY CENTRE (ANNUAL)  
(Degree Centtgrade)

Year	Maximum	Minimum
1965	31.1	23.9
1970	31.1	24.1
1971	30.6	23.7
1972	31.0	24.0
1973	31.2	24.4
1974	30.7	23.8
1975	30.7	23.8

MONTHLY MAXIMUM AND MINIMUM TEMPERATURE AT ALLEPPEY CENTRE

Month	1974		1975	
	Maximum	Minimum	Maximum	Minimum
January	31.2	21.5	31.4	22.1
February	32.0	22.6	N.A.	N.A.
March	32.7	25.2	32.5	25.1
April	33.8	26.7	32.8	25.7
May	30.9	25.3	31.5	24.9
June	29.8	24.1	N.A.	N.A.
July	28.5	23.3	N.A.	N.A.
August	28.5	23.5	28.1	23.1
September	29.1	23.6	29.3	23.5
October	29.5	23.4	29.5	23.1
November	30.6	23.9	30.4	23.8
December	31.8	22.6	31.1	22.7

N. A.—Not available

Source : Meteriological Centre, Trivandrum

**Table III**  
LENGTH OF ROADS (1972-73) (IN THE HINTERLAND)  
(in kilometre)

District	Cement	Bitu- minus	Water board Meccadam	Lower type	Total	Remarks
Alleppey	17.10	632.44	312.39	400.86	1362.79	The district in which the hinterland lies are taken into account.
Kottayam	25.20	1149.02	349.46	257.67	1781.35	
Idukki	-	783.84	291.58	431.23	1506.65	Separate figures for Peermedu taluk not available.
State	111.27	1114.05	3828.14	4296.88	19381.34	

**Table IV**  
LENGTH OF RAILWAY (IN THE HINTERLAND)  
(in kilometre)

District	1973-74				1974-75				Remarks
	Broad gauge	Metre gauge	Mixed gauge	Total	Broad gauge	Metre gauge	Mixed gauge	Total	
Alleppey	..	38.60	..	38.60	..	38.60	..	38.60	The districts in which the hinterland lies are taken into account.
Kottayam	..	52.44	..	52.44	..	52.44	..	52.44	
Peerumedu taluk	..	..	..	..	..	..	..	..	
State	544.54	356.54	8.80	889.95	544.59	336.54	8.80	889.95	

Source : Statistics for Planning 1977.



**Table V**  
GROWTH OF LITERACY IN KERALA

District	1961	1971
Trivandrum	45.30	62.54
Quilon	50.39	64.97
Alleppey	57.04	70.44
Kottayam	61.58	72.88
Idukki	44.33	56.42
Ernakulam	50.33	65.37
Trichur	47.08	61.61
Palghat	35.02	46.69
Malappuram	34.29	47.90
Kozhikode	44.88	57.25
Cannanore	41.29	54.84
STATE	46.85	60.42

Source: Indicators of Regional Development—An Appraisal (Bureau of Economics and Statistics)

**Table VI**  
MEAN WIND SPEED (Km./hr.) 1979  
(Kottayam and Alleppey)

Districts	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Kottayam	3.50	3.09	3.23	10.00	N.A.	3.30	5.00	Nil	N.A.	4.38	10.00	N. A.
Alleppey	8.90	11.81	11.10	12.97	15.03	13.19	8.94	9.29	10.40	8.37	7.34	8.08

**Table VII**  
WATER TRANSPORT SERVICE STATISTICS AS ON 1-4-1977.

Sl. No.	Name of route	No. of trips	Route in length (kms.)
1.	Alleppey—Quilon	4	78.4
2.	Alleppey—Mannar	2	40
3-11.	Alleppey—Changanacherry (via. Pulinkunnu Line, Veliyanad, Kunaramkary, Kainakary, Kavalam etc.)	49	32 (each)
12.	Alleppey (via. Changanacherry, Monoombu)	2	16.8
13.	Alleppey (via. Kavalam)	1	20
14.	Alleppey—Pulikeezh (Via. Kavalam, Muttar)	2	38.4
15.	Alleppey—Champakulam Edathua	2	38.4
16-20.	Alleppey—Kottayam (via. Chithara, Aryad, etc.)	29	28.8 (each)
21.	Alleppey—Nilamperoor	4	35
22.	Alleppey—Edathua	11	28.8
23.	Alleppey—Thalavady	3	31.8
24.	Alleppey—Mulakamthuruthy	4	35
25.	Alleppey—Edathua (via. Pulinkunnu)	2	35
26.	Alleppey—Kandankary	2	21
27.	Changanacherry—Paipad	2	42
28.	Changanacherry—Edathua	2	21
29.	Changanacherry—Nilamperoor	2	27.4
30.	Changanacherry—Champakulam	2	32
31.	Changanacherry—Neerattupuram	2	9
32.	Neerattupuram—Edathua	2	19
33.	Neerattupuram—Kidangara	2	15
34.	Edathua—Thakazhy	3	8
35.	Edathua—Thalavady	6	3
36.	Thalavady—Thakazhy	3	11
37.	Edathua—Kottayam	2	43.6
38.	Kottayam—Pulinkunnu	5	28.8
39.	Kottayam—Mannar	4	51.2
40.	Kottayam—Ambalapuzha	2	43
41.	Kottayam—Chambakulam (via. Cherukara)	3	35
42.	Kottayam—Chambakulam (via. H. Block)	1	38
43.	Kottayam—Leceo	2	21
44.	Quilon—Kadapuzha	4	28.4
45.	Quilon—Muthiraparambu	4	21.8
46.	Quilon—Ayiramthengu	2	36.4



## WATER TRANSPORT SERVICE STATISTICS AS ON 1-4-1977—(Contd.)

Sl.No.	Name of route	No. of trips	Route in length (kms.)
47.	Quilon—Guhanadapuram	12	11
48.	Muhamma—Kumarakom	32	9.6
49.	Ernakulam—Edacochin	2	11
50.	Edacochin—Kumbalam	58	1.6
51.	Ernakulam—Mulavukad	18	9.6
52.	Ernakulam—Naval base	2	5
53.	Ernakulam—Perumbalam	6	22
54.	Ernakulam—Thevara	2	5
55.	Thevara—Mundiyampally	23	5
56.	Vaikom—Pallipuram	80	3
57.	Vaikom—Athirampuzha	3	31.2
58.	Thanneermukkom—Athirampuzha	2	24
59.	Vaikom—Athirampuzha—Circular	3	..
60.	Chengannur—Ernakulam	2	101.2

Source : Administration Report—State Water Transport Department 1975-76.

Table VIII

FOREIGN AND COASTAL CARGO HANDLED AT THE PORTS OF KERALA  
( /000 Tonnes)

Type of traffic	1963-64	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Total traffic	3293	5144	5064	4461	4092	3112	4999	5026
Major ports	2872	4812	4694	4202	3721	4809	4258	4755
Other ports	423	332	370	259	371	303	341	271
Overseas	1793	3881	3829	3380	3269	3926	3503	3940
Coastal	1502	1263	1233	1081	1823	1186	1096	1086
Loaded	694	1518	1340	1226	1027	1398	1055	1343
Unloaded	2601	3626	3724	3235	3065	3714	3544	3683

Source:—Basic Port Statistics of India, 1976-77.

Table IX

## FOREIGN IMPORTS INTO ALLEPPEY PORT

Commodity	Unit	1957-58		1960-61		1965-66		1970-71	
		Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
Copra	M.T.	388	3.96	753	7.57	..	..	..	..
Paddy, rice and food grains	..	..	..	..	..	..	..	11496	134.55
Total		..	3.96	..	7.57	..	..	..	134.55

Table IX—(Contd.)

Commodity	Unit	1971-72		1972-73		1973-74		1974-75	
		Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
Copra	M.T.	..	..	..	..	..	..	..	..
Paddy, rice and food-grains	..	..	..	3.08	55.00	16686	150.66	26161	256.38
Total		..	..	..	55.00	..	150.66	..	256.38



Table X

## FOREIGN EXPORTS FROM ALLEPPEY PORT

(Value: Rs. in lakhs)

Commodity	Unit	1957-58		1960-61		1965-66		1970-71		1971-72		1972-73		1973-74		1974-75	
		Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
Cardamom	M.T.	..	..	..	..	..	..	..	..	..	..	1.17	0.05	0.09	..	..	..
Cashew kernels	"	54	1.63	..	..	..	..	..	..	..	..	..	78	11.13	..	..	..
Coffee	"	..	..	..	..	..	..	..	..	..	..	7.92	148	17.81	..	..	..
Coir yarn and fibre	"	12210	93.75	12453	112.90	15110	205.67	3526	85.27	6414	148.85	133.89	6402	179.25	..	..	..
Coir products	"	7738	118.16	6270	96.68	4008	83.58	754	25.72	1038	42.19	48.18	800	34.06	1284	34.67	..
Cardage and tope of vegetables	"	..	..	..	..	2	1.10	..	..	..	..	0.03	..	..	..	..	..
Fish and prawns	"	..	..	..	..	..	..	..	..	5	1.00	0.98	28	6.90	..	..	..
Ginger	"	27	0.25	290	4.51	19	0.56	13	0.85	..	..	0.39	18	1.04	..	..	..
Jute and jute products	"	258	6.63	243	6.32	41	0.14	..	..	..	..	0.02	..	..	..	..	..
Manlocmeal	"	2613	6.17	6918	13.62	..	..	..	..	..	..	..	..	..	..	..	..
Metals, minerals and ores	"	..	..	..	..	..	..	..	..	12600	8.38	..	..	..	..	..	..
Oil-cake	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pepper	"	1748	34.06	3402	150.67	3467	138.60	569	47.43	144	10.62	108.62	1606	133.51	16	1.01	..
Turmeric	"	390	2.68	525	7.54	999	17.45	175	4.15	..	..	..	27	1.02	..	..	..
Rosewood value	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other kinds of wood	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sundries	"	..	9.44	..	3.39	..	0.95	..	0.06	..	1.02	1.28	..	..	..	..	..
<b>Total</b>		..	272.77	..	395.63	..	443.05	..	163.48	..	212.06	302.48	..	314.81	..	35.68	..

Statistics for Planning, 1977



Table XI

PRINCIPAL IMPORTS AT COCHIN PORT FOR THE PAST 10 YEARS

(Tonnes)

Sl. No.	Commodities	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
1.	Rice and paddy	239756	185270	101489	66392	68119	27	7111	23318	2047	303
2.	Other grains including pulses and flour	259212	31519	88565	75192	63393	147630	200914	326174	157391	25866
3.	Coal	6435	6504	..	54629	66990	29995	66261	105935	178715	139229
4.	Cashewnuts	131547	102082	116470	96588	127738	96866	137590	97677	51439	37802
5.	Machinery	18170	13271	5150	6042	5367	16746	12854	5969	5967	6545
6.	Iron and steel	9872	11709	20755	28906	32001	17175	5942	9953	3975	5649
7.	Tin plate	4557	7094	2491	5078	7755	2587	2779	2579	1062	3461
8.	Motor vehicles and parts	228	273	499	607	869	131	30	10	24	23
9.	Chemicals and chemical preparations	4385	8699	2821	3865	2111	2537	3763	1110	1503	1355
10.	Oil seeds including copra and groundnuts	7143	8884	9826	8519	3752	114	180	310	249	751
11.	Drugs and medicines	992	799	788	640	451	415	130	10	10	11
12.	Paper, old newspaper and stationery	11273	20104	20376	28884	14590	10642	16164	10682	14718	16957
13.	Cotton, raw and waste	19709	31156	41038	37365	38446	21199	3818	2209	14623	27793
14.	Oilman, stores, provisions and spices	583	469	10628	11583	11019	3597	7393	26398	1523	16232
15.	Sulphur	41077	48232	84593	93480	56662	78140	88775	83806	155600	118704
16.	Rockphosphate	109061	93300	142364	102229	77607	105921	140514	86350	148031	257841
17.	Fertilisers	47846	35924	30998	37027	44893	27810	58780	108561	30863	86287
18.	Liquid ammonia	..	..	..	..	..	..	..	..	11148	35036
19.	Salt	30313	49719	35544	43858	21944	36984	30585	19244	13436	444
20.	Zinc concentrate	27828	30200	44641	31532	23663	34341	21527	36310	22601	20687
21.	Calcined bauxite	..	7294	5522	6921	8681	7992	10088	8108	9918	14646
22.	Soda	7002	7387	4291	9629	5064	4573	7554	7969	5844	7359
23.	Candles, paraffin wax and tallow	4675	5696	6990	10088	7258	4029	4128	6	..	18
24.	P. O. L.	2731078	2589980	2606429	2668407	2365900	2174421	2739352	2306736	2695046	2981660
25.	Transshipment cargo	2141	1206	955	587	4250	1678	1530	4307	3076	7039
26.	Miscellaneous	57617	71658	64243	87715	56489	49906	22126	47080	36323	113713
	Total	3782500	3368429	3447466	3515763	3114912	2875456	3589888	3320811	3570132	3925411



Table XII

## PRINCIPAL EXPORTS AT COCHIN PORT FOR THE PAST 10 YEARS

(Tonnes)

Sl. No.	Commodities	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
1.	Coir products	51992	47468	53063	45515	52514	49558	46319	38955	52433	43706
2.	Tea	48208	44145	42506	53561	49539	47062	48271	42315	52360	64322
3.	Rubber	46381	42165	40673	42310	39503	43703	21432	6680	21885	12921
4.	Coffee	18266	18648	19606	25084	26110	37772	40820	21455	13449	15050
5.	Coconuts	11955	8675	6619	1967	3529	2426	..	75	13	62
6.	Copra	45076	44547	39527	38352	38508	21296	13989	5245	3847	120
7.	Cashew kernels and nuts	82006	71327	58684	70399	77000	61022	73621	60413	57474	43279
8.	Chemicals	11050	15826	14943	14793	14676	14052	9277	10379	21421	15339
9.	Cotton, raw and waste	2035	1466	1403	778	1771	1000	368	1888	1934	300
10.	Rice & other foodgrains	3043	533	2238	1347	2174	3580	2253	3268	3957	17320
11.	Pepper	19631	21824	17582	20558	21231	30287	28109	26978	2,098	26150
12.	Ginger	2762	1004	1553	4452	4985	4382	4282	2896	1816	7107
13.	Cardamom	562	658	762	841	838	763	923	587	356	408
14.	Turmeric	954	949	1098	2243	1512	1955	2011	2131	1745	3251
15.	Coconut oil	3720	2487	812	1948	2868	3112	1149	372	9	1
16.	Cashew shell liquid	9881	8785	7411	6486	5365	4595	6679	7338	4293	2682
17.	Lemongrass oil	173	286	263	330	326	439	280	383	208	154
18.	Timber	16100	23398	14618	19223	24646	30886	15262	21838	29622	17573
19.	Marine products	24328	28782	35229	33263	39303	48990	31862	44559	44,92	42049
20.	Oil cakes	8121	5323	4604	9666	5301	7410	1116	..	1	1020
21.	Machinery	1196	1833	1642	2362	1975	6558	7088	5606	8763	7393
22.	Iron & steel	2421	4236	5526	9177	7986	5960	1562	3365	6547	2525
23.	Minerals including granite	5406	6656	13684	13821	17483	35000	22482	11565	7428	8457
24.	Cement	2275	2053	1809	2138	3936	4716	4307	5737	8518	13967
25.	P. O. L.	942272	974093	961953	722723	597479	3,6789	800920	566314	756063	826586
26.	Transshipment cargo	2141	1206	955	587	4250	1678	1530	4307	3076	7039
27.	Miscellaneous	44176	47345	43291	33850	42388	50392	37528	42443	71316	70204
	<b>Total</b>	<b>1407036</b>	<b>1425718</b>	<b>1392054</b>	<b>1177774</b>	<b>1086996</b>	<b>845383</b>	<b>1223440</b>	<b>937092</b>	<b>1197425</b>	<b>1248985</b>
	<b>Bunkers</b>	<b>69609</b>	<b>74147</b>	<b>56076</b>	<b>63610</b>	<b>52519</b>	<b>45805</b>	<b>58917</b>	<b>50486</b>	<b>66810</b>	<b>113146</b>



**Table XIII**

CARGO HANDLED AT THE PORT OF COCHIN  
(Tonnes)

Year	Imports	Exports	Total
1950-51	1,115,785	252,947	1,368,732
1955-56	1,240,369	394,057	1,634,426
1960-61	1,621,261	387,408	2,008,669
1965-66	2,412,763	459,115	2,871,878
1970-71	3,447,466	1,392,054	4,839,520
1975-76	3,320,811	937,092	4,257,903
1976-77	3,570,132	1,197,425	4,767,557
1977-78	3,925,411	1,248,985	5,174,396

Source:—Cochin Port Trust—Administration Report 1977-78.

**Table XIV**

ESTIMATES OF IMPORT TRAFFIC THROUGH COCHIN PORT (1975-76 TO 1995-96)

Import	1975-76 (actual)	1982-83	1987-88	1992-93	1995-96
<b>Foreign</b>					
Petroleum crude	2268.3	3300.0	3300.0	5000.0	6000.0
Liquid ammonia	..	112.0	177.0	312.0	312.0
Fertilizers	108.6	..	..	..	..
Fertilizer raw materials	162.1	693.0	693.0	693.0	693.0
(a) Rock phosphate	78.3	435.0	435.0	435.0	435.0
(b) Sulphur	83.8	170.0	170.0	170.0	170.0
(c) Potash	..	88.0	88.0	88.0	88.0
Rice and other foodgrains	157.4	..	..	..	..
Zinc concentrates	36.3	40.00	60.0	80.0	80.0
Iron and steel	9.8	48.6	46.9	56.8	68.8
Cashewnut (raw)	97.7	75.0	60.0	50.0	45.0
Machinery	5.9	8.2	10.5	13.5	15.7
Tin plate	2.5	2.8	3.3	3.9	4.3
Miscellaneous goods	64.6*	20.0	10.0	10.0	10.0
<b>Total :</b>					
Foreign import	2913.2	4299.6	4360.7	6219.2	7228.8
<b>Coastal</b>					
Petroleum products	38.3	60.0	80.0	105.0	150.0
Coal	105.9	100.0	100.0	100.0	100.0
Rice and other foodgrains	192.0	217.0	233.0	247.0	260.0
Salt	19.2	43.0	43.0	43.0	43.0
Soda	8.0	12.0	19.0	23.0	23.0
Calcined bauxite	8.1	8.0	8.0	8.0	8.0
Miscellaneous	35.7**	5.0	5.0	5.0	5.0
Total coastal import	407.2	445.0	488.0	531.0	589.0
Total import traffic (foreign and coastal)	3320.8	4744.6	4848.7	6750.3	7817.3

Source:—Traffic Survey of Cochin Port (NCAER)

\*includes paper, stationery, oilman store and transshipment.

\*\*includes transshipment cargo



**Table XV**

ESTIMATES OF EXPORT TRAFFIC THROUGH COCHIN PORT (1975-76 TO 1995-96)

Export	('000 tonnes)				
	1975-76 (actual)	1982-83	1987-88	1992-93	1995-96
<b>Foreign</b>					
Marine products	44.6	62.0	79.0	101.0	117.0
Engineering goods	5.1	25.3	43.6	66.5	81.4
Chemicals including titanium dioxide	6.9	38.4	62.8	109.0	109.9
Cement	..	18.0	36.0	52.0	67.0
Tea	42.3	46.0	52.0	56.0	61.0
Cashew kernel	60.4	52.5	53.8	54.5	55.5
Coir and coir products	38.9	47.1	49.5	52.0	53.6
Spices—total	32.6	39.5	42.6	45.9	48.0
(a) Pepper	27.0	32.1	34.5	37.2	38.9
(b) Cardamom	0.6	1.3	1.4	1.5	1.5
(c) Other spices	5.0	6.1	6.7	7.2	7.6
Mineral sand (Ilminite and rutile)	10.2	69.0	61.4	45.0	46.2
Cashew shell liquid	6.9	15.0	20.0	30.0	40.0
Cocon	..	9.0	13.0	26.0	30.0
Rubber (raw)	..	..	..	24.0	29.0
Oilseed meals including rice bran cake	..	20.5	22.3	22.2	22.9
Plywood and Veneer	..	10.0	11.0	15.0	17.0
Magnesite	..	8.7	10.5	12.8	14.4
Coffee	21.5	15.0	10.0	10.0	10.0
Miscellaneous goods	61.8*	57.0	55.0	128.0	160.0
Total foreign export	334.2	533.0	651.5	849.9	962.9
<b>Coastal</b>					
Petroleum products	566.3	300.0	..	..	300.0
Rubber (raw)	6.3	56.0	64.5	68.6	79.3
Miscellaneous goods	30.2**	30.0	30.0	30.0	30.0
Total coastal export	602.8	386.0	94.5	98.6	409.3
Total export traffic (foreign and coastal)	937.0	919.0	746.0	948.5	1372.2

Source:—Traffic Survey of Cochin Port

\*includes cotton, timber, transshipment cargo

\*\*includes copra, rice, iron and steel, mineral sand, cement, transshipment cargo.

**Table XVI**

DETAILS OF OUTWARD TRAFFIC (QUANTITY AND VALUE) THROUGH AROOR CHECKPOST FOR THE YEARS 1974-75 AND 1978-79.

Commodity	1974-75		1978-79	
	Quantity (Tonnes)	Value (Rs. in lakhs)	Quantity (Tonnes)	Value (Rs. in lakhs)
1. Marine products	852	498.66	8341	2434.04
2. Coir and coir products	15227	421.31	129243	1445.54
3. Cashew kernels	40977	8191.71	27710	5161.70
4. Cashew shell liquid	1100	76.63	3140	218.21
5. Rubber	4946	481.78	5260	722.07
6. Prawns	159	17.14	465	52.35
7. Turmeric	355	15.99	277	12.45
8. Pepper	3803	509.08	3804	509.30
9. Ginger	31	2.35	527	40.14
10. Cardamom	18	14.99	110	92.45
11. Coconut oil	230	25.04	1960	230.45
Total	70698	10254.68	180837	10918.73



Table XVII

DETAILS OF INWARD TRAFFIC (QUANTITY AND VALUE) THROUGH AROOR CHECKPOST FOR  
THE YEARS 1974-75 AND 1978-79

Commodity	1974-75		1978-79	
	Quantity (Tonnes)	Value (Rs. in lakhs)	Quantity (Tonnes)	Value (Rs. in lakhs)
1. Cement	..	..	2020	72.36
2. Paper and newsprint	888	4.45	11003	45.77
3. Fertilizers	..	..	9400	48.90
4. Cotton (raw)	480	7.50	16090	114.90
5. Cashewnut (raw)	141660	3116.53	5200	114.90
6. Machinery	..	..	402	70.44
7. Coal	..	..	281	0.73
8. Steel and steel products	..	..	726	21.42
9. M. S. Goods	8	0.20	1993	37.98
10. Carbon black	..	..	187	11.73
Total	143036	3128.68	47202	675.31

## BUREAU OF ECONOMICS AND STATISTICS

GOVERNMENT OF KERALA

## Traffic Potential Survey of Alleppey Port

Schedule I: Manufacturing Establishments

Confidential

## I. General

(for office use only)

- |                          |                     |                          |
|--------------------------|---------------------|--------------------------|
| 1. Name                  | 2. Address          | 3. Products manufactured |
| 4. Year of establishment | 5. No. of employees |                          |

## II. Installed capacity and production

Item	Unit	Installed Capacity			Production and Value		
		1975-76 Qty.	1976-77 Qty.	1977-78 Qty.	1975-76 Qty. Value	1976-77 Qty. Value	1977-78 Qty. Value

Table XVI

## III. Raw materials consumed

Item	Unit	1975-76		1976-77		1977-78	
		Qty.	Value	Qty.	Value	Qty.	Value

## IV. Sources of raw materials (Average for the last three years—1975-76 to 1977-78)

Item	From Kerala Qty.	From other States (specify) Qty.	From foreign countries (specify) Qty.



V. Mode of transport and the relative cost and duration involved in the import of raw materials from other States (Average for the last three years 1975-76 to 1977-78)

Item	Unit	States	Road			Rail			Sea		
			Qty.	dura- tion	Cost	Qty.	dura- tion	Cost	Qty.	dura- tion	Cost

VI. Disposal of products (Average for the last three years)

Products	Unit	Total sold		Exported to other States (specify) Qty.	Exported to foreign countries (specify) Qty.
		Quantity	Ex-factory price		

VII. Mode of transport and the relative cost and duration involved in the export to other States (Average for the last three years)

Item	Unit	States	Road			Rail			Sea		
			Qty.	dura- tion	Cost	Qty.	dura- tion	Cost	Qty.	dura- tion	Cost

VIII. Details of exports through various ports

Item	Unit	Cochin Port			Alleppey Port			Other ports, if any		
		Qty.	Duration	Cost	Qty.	Duration	Cost	Qty.	Duration	Cost

IX. Relative advantages and disadvantages of each port

Cochin		Alleppey		Others, if any (specify)	
Advantages	Disadvantages	Advantages	Disadvantages	Advantages	Disadvantages

X. Do you intend to expand your installed production capacity? If yes, what would be your production capacity?

Item	Unit	1984-85	1989-90	1999-2000
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**XI.** If Alleppey port is developed into an all weather port, what would be the quantity of imports and exports likely to be handled through Alleppey port.

Item	Unit	1984-85		1989-90		1999-2000	
		Import	Export	Import	Export	Import	Export

**XII.** Suggestions for the improvement of Alleppey port

**XIII.** Remarks

Date :

Signature :

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**BUREAU OF ECONOMICS AND STATISTICS—GOVERNMENT OF KERALA**

**Traffic Potential Survey of Alleppey Port**

**i. General**

**Schedule II—Exporters**

Name of the exporter :

Address :

Year of establishment :

No. of employees :

Items of exports :

**ii.** Quantity and value of exports to other states and foreign countries (Average for the last three years 1975-78)

Item	Unit	Other States in India (Specify)		Foreign countries specify	
		Q	V	Q	V

**iii.** Mode of transport for exports to other states and the relative cost and duration (Average for the last three year)

Item	Unit	States	Road			Rail			Sea		
			Quantity	Duration	Cost	Quantity	Duration	Cost	Quantity	Duration	Cost



## IV. Details of coastal and foreign exports through various ports

Item	Unit	Cochin Port			Alleppey Port			Other ports if any		
		Quantity	Duration	Cost	Quantity	Duration	Cost	Quantity	Duration	Cost

## V. Relative advantages and disadvantages of each port

	Cochin Port		Alleppey Port		Other ports if any	
	Advantages	Disadvantages	Advantages	Disadvantages	Advantages	Disadvantages

## VI. If Alleppey is developed into an all weather port what would be the quantity of exports likely to be handled through Alleppey

Item	Unit	1984-85	1989-90	1990-2000
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## VII. Suggestions for the improvement of Alleppey port

## VIII. Remarks

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**Traffic Potential Survey of Alleppey Port**

Schedule III—Importers

## I. General

1. Name of the importer :
2. Address :
3. Year of establishment :
4. No. of employees :
5. Items of import :

## II. Quantity and value of imports from other states and foreign countries (Average for the last 3 years (1975-76 to 1977-78))

Item	Unit	Imports from other States (Specify)	Imports from foreign countries (Specify)
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III. Mode of transport for the imports from other States and the relative cost and duration (Average for the last 3 years).

Item	State	Road			Rail			Sea		
		Quantity	Cost	Duration	Quantity	Cost	Duration	Quantity	Cost	Duration

IV. Details of coastal and foreign imports through various ports.

Item	Unit	Cochin port		Alleppey port		Other ports, if any (Specify)	
		Quantity	Value	Quantity	Value	Quantity	Value

V. Relative advantages and disadvantages of each port.

Cochin port		Alleppey port		Other ports, if any	
Advantages	Disadvantages	Advantages	Disadvantages	Advantages	Disadvantages

VI. If Alleppey port is developed into an all weather port, what would be the quantity likely to be imported by you through Alleppey port.

Item	Unit	1984-85	1989-90	1999-2000
------	------	---------	---------	-----------

VII. Suggestions for the improvement of Alleppey port.

VIII. Remarks.



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