

Chapter 4 Present Conditions of Galle Port

4.1 Location and Brief History of Galle Port

Galle Port is located in Galle Bay at latitude 6° N, longitude 82° 12' E, about 120 km south of Colombo Port on the south-west coast of Sri Lanka and its location is nearer to main shipping routes between the East and the West than Colombo Port. Galle Port is the only commercial port on the southwest coast.

It has the longest history among ports in Sri Lanka. Although some functions of the Port began to be transferred to Colombo Port in the 1890's, Galle port continued to be very active until the 1930's for handling cargoes such as tea, rubber, and copra for export, and rice and sugar for import. In those days jetties, which still exist close to the entrance of the Galle Fort, were the only port facility and cargo handling was carried out using barges.

The natural conditions of Galle Bay are characterized by swells, in particular in the south-west monsoon season, and rocks scattered on the sea bed. The bay is divided into two parts, the eastern and western parts, by the reef located on the west side of Gibbet Island. It is almost impossible to use the eastern part in the south-west monsoon season on account of rough waves. Therefore, the anchoring area near the watering point in the eastern part of the Bay is not used in this season.

Many plans to improve the conditions of Galle bay have been formulated and some date back to the middle of the 19th century. It was 1971 when the present port was constructed, making use of Gibbet Island. Gibbet Island is connected to the main land by reclaimed land on which the administration building is located. It took 6 years to complete construction. The facilities of the fishery port were constructed at the same time.

Although the original plan called for a berth depth of 33 ft. (10.0m), it was changed in the implementation phase and dredged to up to 28 ft (8.5m). From 1980 to 1982, more dredging works were carried out in the basin and channel and a depth of 8.9m was maintained.

According to the request of the Sri Lankan Government, JICA carried out the development study of Galle Port and submitted the Final Report in 1991. The Study proposed to develop Galle Port as a supplementary port of Colombo Port to alleviate the burden of container transshipment cargo on Colombo Port. The Plan called for two container berths, one general/bulk cargo berth and one oil jetty in short-term development plan and three container berths, two general/bulk cargo berths and one oil berth in long-term development plan. Although the Sri Lankan Government tried to develop Galle Port on BOT scheme, the plan was not realized.

4.2 Existing Port Facilities and Their Usage

The entrance of the Port is around 500 ft. (152m) wide and consists of two rubble mount breakwaters. The quay wall starts from the base of the south breakwater. The length of quay wall is about 420m and the first 60m of the quay on the western side is used for small vessels such as a tugboat and ship chandler service boats. Next to this part, the 300m section from the 1st bollard to 16th bollard is used for cargo vessels' berths. The present depth of the berths is less than 8m

(despite the designed depth of 8.9m) because of siltation. Now, urgent dredging works are being carried out and in a couple of months depth of the berth and mooring basin will be 8.9m.

There are two warehouses with respective of 2,000m² and 4,000m². The smaller one is leased to the army and surrounded by barbed wire. The larger one is used for storing bagged flour.

Backyard of the quay wall and warehouses is leased to Cement Companies. One cement bagging plant (Galle Cement) has already been in operation from July in 1999, the other (Ceylon Ambuja Cement) is under construction and will be operated from September of this year. These plants import bulk cement and pack it into bags for sale on the domestic market. The area between the quay wall to cement packing plants is not paved and causes some troubles for truck movement. Pipelines directly connected to cement packing plants transport bulk cement.

On the east part of the mooring basin, two new jetties are under construction by SLPA. The dimensions of the larger berth are 160m long and 9m deep and will accommodate an 8,000 D.W.T. cargo vessel. The smaller jetty is 86m long and it will be used for small crafts such as a tugboat and working vessels. The construction works are expected to be completed in February of 2001.

There is a water supply facility for vessels. However, because of a shortage of water supply from the Galle Municipal Council, watering service has not been operated by SLPA for 4 or 5 years. Shipping agencies supply vessels with water by lorries. The head of a pipe used for unloading refined petroleum from Colombo is installed at the seaside but it is not used because from June of last year tankers stopped calling at the Port.

At the backside of warehouses there are rail tracks and platforms alongside. However, this railway is not used and several parts of the railway have been overlaid.

Table 4.1.1 shows present port facilities of Galle Port and Figure 4.1.1 shows the layout of Galle Port.

Table 4.2.1 Present Port Facilities of Galle Port

(1) Breakwater

	Length	Type
North	250m	Rubble mount
South	200m	Rubble mount

(2) Warehouse

	No. of Units	Capacity	Floor areas	Average Height	Av. Stacking Height	Remarks
No.1	6	14,244m ³	2,000m ²	8.7m	6.6m	Lease to army
No.2	12	28,488m ³	4,000m ²	8.0m	6.6m	

(3) Berth

	Length	Draught	Apron Width	Remarks
Closenburg Jetty 1	130m	7.3m	7.2m	
Closenburg Jetty 2	130m	7.3m	7.2m	
New Berth 1	160m	9.0m*		Under Construction
New Berth 2	86m	9.0m*		Under Construction For small vessels

Note) * shows depth of the berth

(4) Cargo Handling Equipment

	Number	Capacity
Crane	4 units	100t×1, 25t×1, 7t×1
Forklift	8 units	2.5t×7, 3.5t×1
Grab	13 units	3t×4, 2t×9

(5) Water Supply Facilities

Water Pump	Delivery rate : 15 tons / hour on average
Overhead Tank	Capacity : 100 tons

4.3 Navigation

The harbour master's section has its own small port, which is called the old port, near the Fort. Pilotage is compulsory for all vessels except those exempted by the Harbour Master and as no lit navigational aids are provided, channel transit is limited to daylight hours only, basically from 6 a.m. to 6 p.m. As for navigational aides, a bell buoy and 6 other buoys are provided. Boats managed by the harbour master section are listed below.

Table 4.3.1 Boats of Harbour Master Section

Type	Number
Pilot Boat	1
Tug	1 (2,000hp)
Mooring Launch	1

The harbour master is given notice regarding ship entrance 3 days in advance by agents. If there are any change, agents have to inform the harbour master 24 hours before entrance. The pilot waits for the ship at 1.5 miles south offshore of the lighthouse and the pilot boards the ship when the ship arrives at the place.

The approach channel begins at the location of bell buoy and is about 1.5 miles long and it bends almost at a right angle at the entrance of the Port. The depth of the approach channel is approximately -9.8m and its narrowest part is approximately 135m wide.

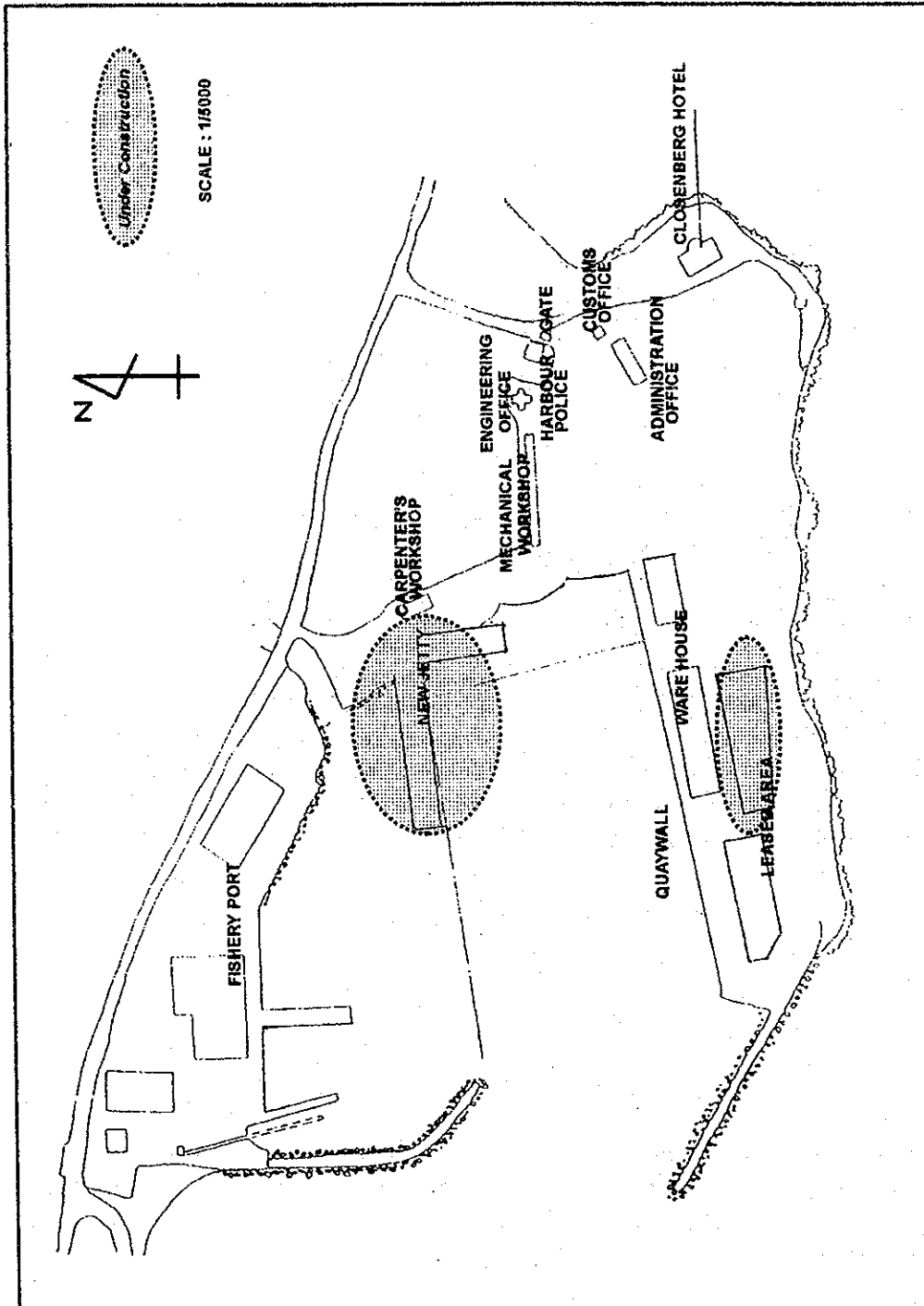


Figure 4.2.1 Layout of Galle Port

A tugboat waits in front of the breakwaters. To enter the Port, a ship has to change its direction by 120° in the turning basin. One tug with 2,000 horsepower is available to assist if required. However, the 120° turn to enter the port is usually accomplished on ship's engine only, as the tug finds it difficult to maneuver in the high swell in south west monsoon season outside the breakwaters.

After entering the Port, the vessels are turned 180° on the anchor with assistance of the tug before being berthed. As the width of the inner harbour basin is only 220 - 250m, a 130m overall length restriction on vessels is currently adapted.

4.4 Calling Vessels

The number and the size of calling cargo vessels increased dramatically from 1998, largely due to the increase in the number of bulk carriers and oil tankers. From 1997 to 1999 the number of bulk carriers increased from 20 to 53 while that of oil tankers increased from 2 to 16.

Table 4.4.1 Total Number of Ships Arrived

Year	Galle Port			All Ports		
	No. of Ship	G.T. (‘000)	Av. G.T. (‘000)	No. of Ship	G.T. (‘000)	Av. G.T. (‘000)
1990	59	126	2.1	3,089	39,751	12.9
1991	54	158	2.9	3,178	41,503	13.1
1992	74	189	2.6	3,438	45,446	13.2
1993	62	203	3.3	3,631	52,230	14.4
1994	74	265	3.6	3,568	54,978	15.4
1995	69	185	2.7	3,612	57,842	16.0
1996	84	196	2.3	3,857	67,213	17.4
1997	56	173	3.1	4,087	73,080	17.9
1998	104	541	5.2	4,233	79,790	18.8
1999	97	512	5.3	4,339	81,802	18.9

Table 4.4.2 Ship Arrivals by Ship Type

	1997	1998	1999
Conventional Cargo	31	34	23
Dry Bulk Carrier	20	38	53
Oil Tanker	2	25	16
Passenger Ship	2	5	1
Passenger/Cargo Ship	1	-	2
Others		2	2
Total	56	104	97

Among 97 calling vessels, 81 vessels were vessels that discharged or loaded cargoes (excluding fishing crafts). The distribution of cargo vessel size is shown in table 4.4.5. Number of vessels

more than 10,000D.W.T. is 17, which represents 20% of the total. As the standard dimensions of 10,000 D.W.T are 137m in length and 8.2m in full drought, the restriction on length (less than 130m) and drought (less than 8.0m) of vessels practically limits the size of calling vessels at Galle Port .

Table 4.4.3 Distribution of Cargo Vessel Size at Galle Port in 1999

D.W.T	No. of Vessels	Standard Dimensions of Vessel by D.W.T			
		D.W.T	Length(m)	Beam(m)	Drought(m)
More than 12,001	2	12,000	144	21.0	8.6
10,001 – 12,000	15				
8,001 – 10,000	29	10,000	137	19.9	8.2
6,001 – 8,000	6				
4,001 – 6,000	2	5,000	109	16.8	6.5
2,001 – 4,000	11	3,000	94	14.6	5.6
Less than 2,000	16	2,000	83	13.1	4.9
Total	81				

Source: JICA Study Team

4.5 Cargo Traffic

Table 4.5.1 shows the total cargo volumes handled at Galle Port from 1990 to 1999. Main commodities are bagged cement, bagged flour, bulk cement and clinker. Import of cement has increased sharply since 1998. Flour import by coastal service from Trincomalee Port is constant at the range between 33,000 ~ 48,000 M.T. for the last decade. In addition, fuel oil was transported by Ceylon Petroleum Corporation until May of 1999.

Table 4.5.1 Cargo Throughput of Galle Port

(000 tons)

Commodity	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Tonnage Discharged										
2.Break Bulk										
(1)Cement Bags					9	4		28	52	119
(2)Fertilizer Bags					6					
(3)Flour Bags	43	33	37	47	41	47	48	42	39	34
(6)Rice Bags	3	3	8	10	8					
(12)Other Break Bulk	131		0		12	4	4	1		2
(Sub-total)	178	36	45	57	76	55	52	71	91	155
3.CARGO-Dry Bulk										
(1)Cement										87
(2)Clinker			148	175	197	168	177	101	280	174
(4)Gypsum			9	6	15	12	4	4	11	9
(7)Other Dry Bulk		158								
(Sub-total)	0	158	157	181	212	180	181	105	291	270
4.Liquid Bulk										
(2)Fuel Oil			35	17	7	1	1	5	20	13
(Sub-total)	0	0	35	17	7	1	1	5	20	13
TOTAL DISCHARGED	178	194	236	255	295	236	234	181	402	438
Tonnage Loaded										
2.Break Bulk										
(5)Other Break Bulk	1				7	2	2	1		1
(Sub-total)	1	0	0	0	7	2	2	1	0	1
TOTAL LOADED	1	0	0	0	7	2	2	1	0	1
TOTAL TONNAGE	179	194	236	255	301	238	236	182	402	439

Source: SLPA

4.6 Management and Operation

4.6.1 Organization of Sri Lanka Ports Authority

(1) Legal Framework

SLPA was established on the 1st of August in 1979 under the provisions of the Sri Lanka Ports Authority Act, No. 51 of 1979. The Department of the Port Commissioner, The Port (Cargo) Corporation, The Port Tally and Protective Service Corporation merged to form this Authority.

According to the Act, main duties of the Ports Authority are to provide port services efficiently, control port activities regularly and manage the ports to be self supporting (see Appendix A4.6.1). The Act was amended on 31st January and 23rd August in 1984, 26th September in 1990 and 19th February 1992.

(2) Organization of SLPA

SLPA consists of 5 department, 18 divisions, 4 port offices and secretary office. Names of divisions and internal relations are indicated in Figure A 4.6.1. Functions of divisions are set out in Appendix A4.6.2.

(3) Board of Directors

The decision making system of SLPA basically lies in the Board of Directors. Board of Directors consists of nine Directors as shown in Table A4.6.1. The Minister in charge of Ports appoints the Chairman and five other Directors including the Managing Director of SLPA. Among remaining three Directors one is the Principal Collector of Customs, one is a representative of the General Treasury nominated by the Minister in charge of Finance, and the last one is a representative of the Ministry in charge of Fisheries nominated by the Minister in charge of Fisheries.

(4) Galle Port

Over-all administration of Galle Port is vested in the Resident Manager who is responsible directly to the Chairman/Vice Chairman/Managing Director/Director (Commercial Services) with regard to duties and responsibilities assigned him. Seven functional sections are performing duties: Resident Manager's Office, Operations section, Finance Section, Engineering Section, Welfare Section, Security Section and Assistant Harbour Master Office. All Sectional Heads of the Port function under the Regional Manager (see Figure 4.6.1). Figure 4.6.2 indicates executive position at Galle Port.

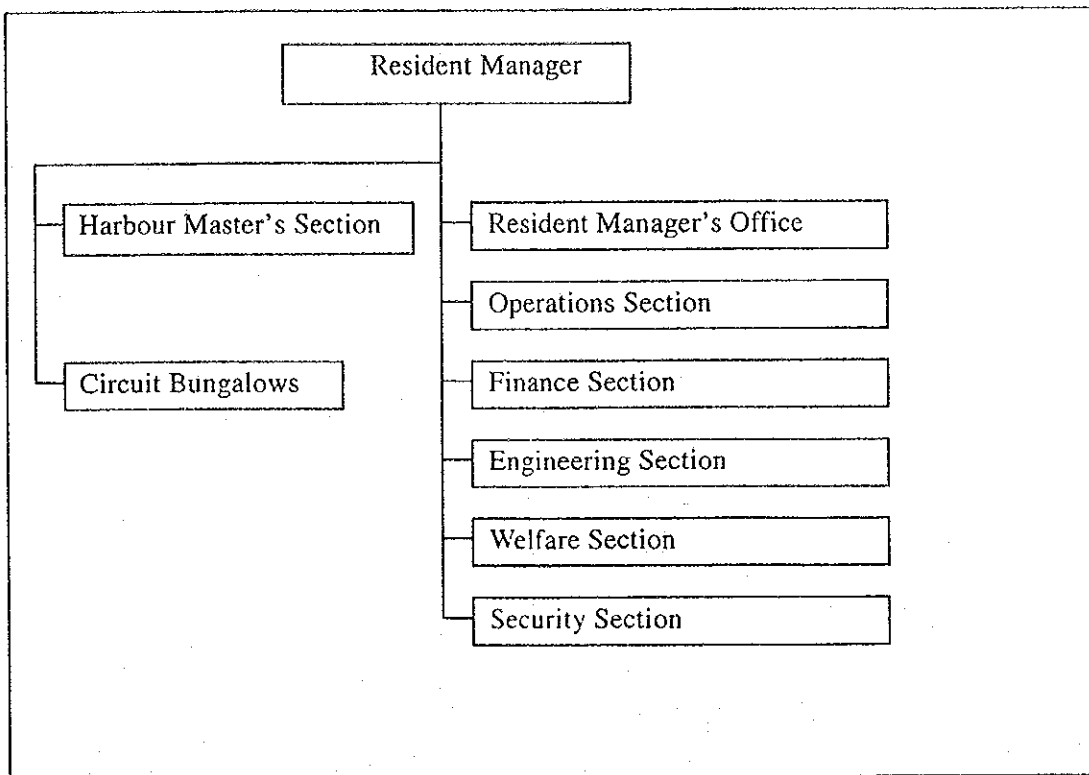


Figure 4.6.1 Functional Allotment of Galle Port

4.6.2 Management

In Galle Port, infrastructure and fundamental service facilities are owned and operated by SLPA. However, in case of bulk cargo such as oil and cement, port users rent the land from SLPA and operate their own facilities. Galle Cement, Ceylon Ambuja Cement and the Ceylon Petroleum Corporation are identified as enterprises which have private facilities.

In case of Colombo Port, up to 1999 all infrastructures on public berths are owned and operated by SLPA. In September of 1999, BOT(Build, Operate and Transfer) project has commenced for Queen Elizabeth Quay (QEY). Old fashioned conventional berth and shallow container berth have been transformed into a modern container berth with the help of private participation. Specified facilities such as oil handling equipment, pipeline, grain elevator, pneumatic pipeline system have been owned and operated by cargo users from their establishment.

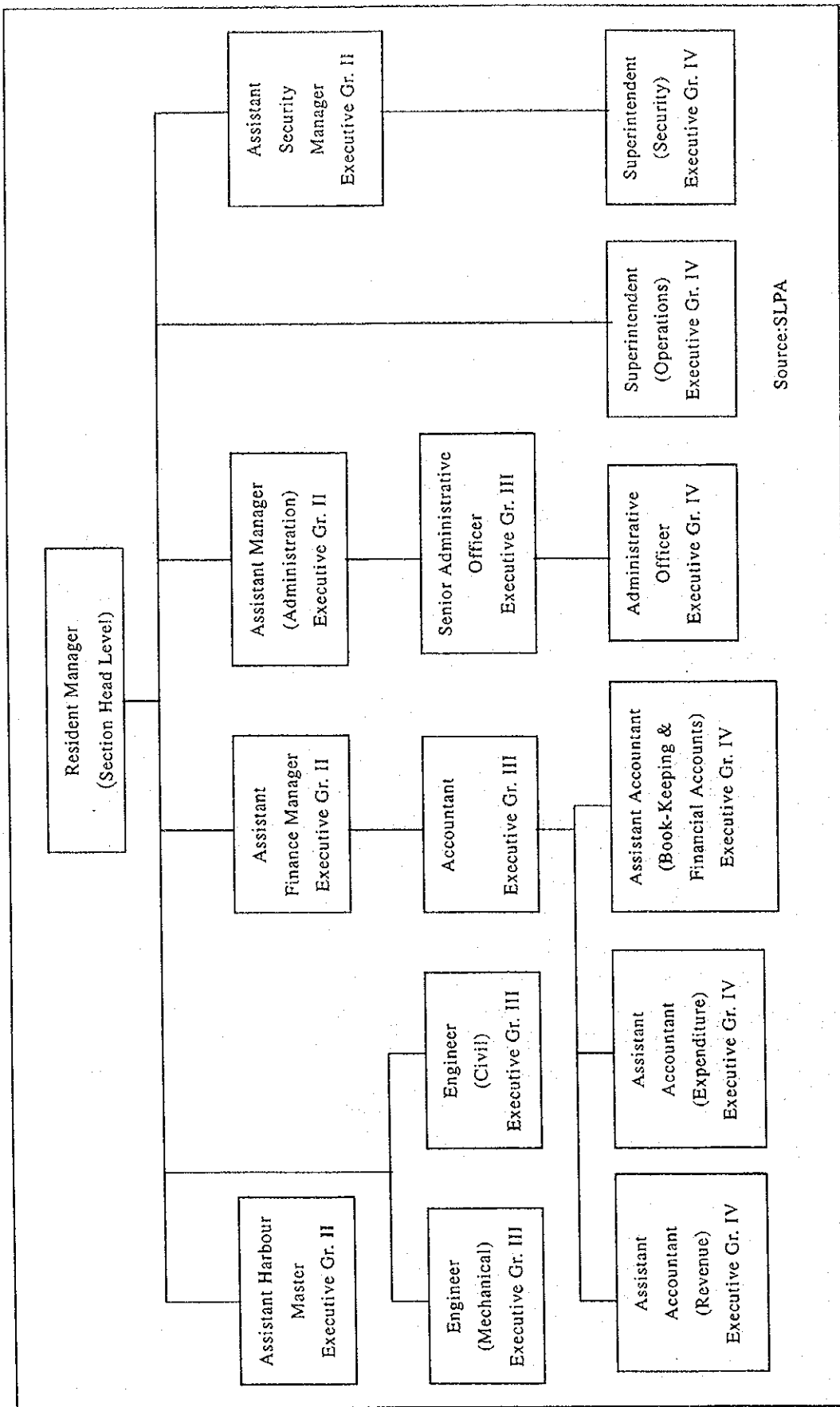


Figure 4.6.2 Executive Position at Galle Port as of April 2000

Table 4.6.1 Type of Management in Colombo Port and Galle Port

Name of Terminal	Type of Cargo	Style of Management
Colombo		
Jaya Container Terminal	Container	SLPA
Queen Elizabeth Quay	Container	SAGT(B.O.T-30 years life)
Bandaranike Quay	Break Bulk	SLPA
Prince Vijaya Quay	Bulk, Break Bulk	SLPA
Of which, Grain Terminal	Bulk	Facility owned and operated by Private
Mahaberi Cement	Bulk	Facility owned and operated by Private
North & South Piers	Break Bulk	SLPA
South Jetty	Product Oil	Owned by the Ceylon Petroleum Corporation and operated by Lanka Marine Service
Guide Pier	Break Bulk	SLPA
Coaster berths	Break Bulk	SLPA
Oil Terminal & Single Point Buoy	Product Oil & Crude Oil	Facility owned and operated by the Ceylon Petroleum Corporation
Galle		
Existing Berth	Break Bulk, Bulk	SLPA
Buried pipe connected to Cement Plant	Bulk Cement	Facility owned and operated by Galle Cement
Buried pipe connected to Cement Plant (under construction)	Bulk Cement	Facility owned and operated by Ceylon Ambuja Cement
New Berth (under construction)	Bulk, Break Bulk	SLPA

4.6.3 Working Condition and Employment

(1) Working Hours and Dates

Work shifts are not fixed to cope with unexpected changes in the arrival time of calling ships. Working times of port office, container terminal and conventional berth are listed in Tables 4.6.2 on Galle Port and 4.6.3 on Colombo Port.

(2) Employment

Number of employees at SLPA is around 19,000, while that at Galle Port is 760.

1) Trend of Number of Employee

Number of employees has been slightly decreasing year by year in SLPA, but has remained constant at Galle Port.

Table 4.6.2 Working condition in Galle

Services	Operating Hours	Number of Shifts	Break Time & Meal Time	Number of Closing Days in a Year	Date of Closing Days in a Year
Pilotage	6:00 – 18:00	1 pilot	Non	1	May Day
Towage	6:00 – 18:00	1	Non	1	May Day
Entry into the Port	6:00 – 18:00	1	Non	1	May Day
Break Bulk Cargo Operation (stevedoring/long shoring)	23 hours (day) 730 – 1630 (night) 1630 – 630	2 shifts	1 hour 45 minutes 1200 – 1230 1500 – 1515 2100 – 2130 2300 – 2315 400 – 415	2	New Year's Day & May Day
Delivering/Receiving of Cargoes	24 hours	2 shifts		2	New Year Day & May Day
Water Supply	No service				
Garbage Collection	No service				
Customs Clearance	800 – 1645 Inspection available 24 hours upon request	1 shift	1200 – 1230	0	Non
Quarantine Inspection	900 – 1645 if necessary 24 hrs.	1 shift	No		Sunday, Government Holidays, Saturday's work upon request.
Office Work of the Ports Authority	900 – 1715	1 shift	1230 – 1300		Saturday, Sunday, Government Holidays

Note: In case of cargo operation, work is continuous but workers take rests by turns

Table 4.6.3 Number of Employees

Year	1985	1990	2000(April 20)
SLPA	19,972	19,818	19,103
Galle	930	755	757

2) Number of Employees by Division in SLPA

A large number of employees are working in operations division (31.5% of the total), engineering division (21.0%) and security division (11.1%).

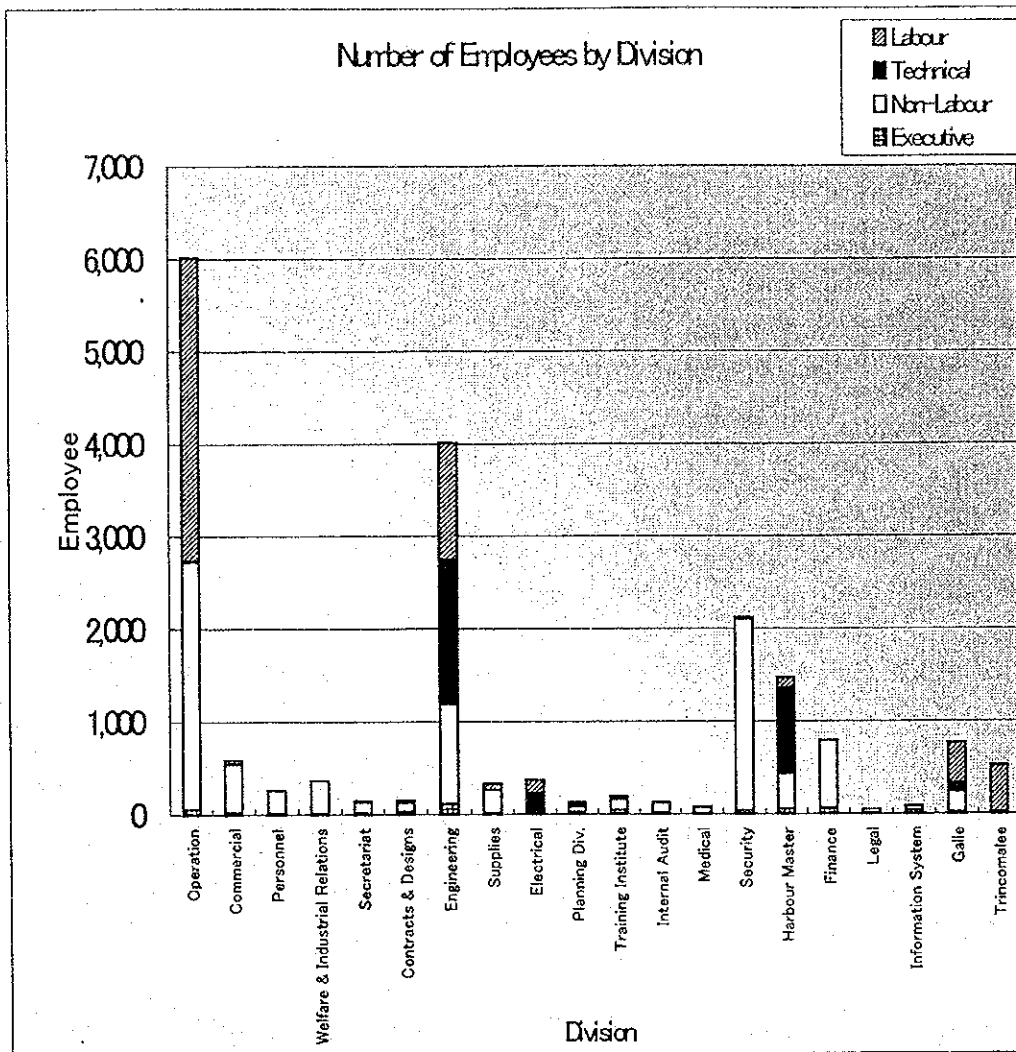


Figure 4.6.3 Number of Employees by Division in SLPA

3) Employment in Galle Port

Number of employees of the operations- and engineering-section in 2000 has decreased compared to 1985. However, there has been an increase in the number of workers in the Resident Manager's Office and Security-section.

Table 4.6.4 Number of Employees by Section at Galle Port

Year	1985	1990	2000(April 20)
Resident Manager's Office	15	16	42
Finance	32	36	36
Operation	585	434	422
Security	0	15	48
Harbour Master's Office	51	50	49
Engineering	247	196	157
Harbour Inn	0	8	3
Total	930	755	757

(3) Accident Records

In Colombo Port, number of accidents reached 164, 130 and 131 in 1997, 1998 and 1999 respectively. There was a particularly high rate of accidents in the conventional cargo area, due to its relatively limited space (see Table 4.6.5). Table 4.6.6 indicates the trend of accidents by age. Those ages from 41-50 were especially prone to accidents. The number of accidents by operational labours was high. Tighter safety checks must be introduced if these accidents are the result of lack of a periodical inspection on equipment.

In case of Galle Port, numbers of person treated at a hospital during 1997 and 1999 are 73, 89 and 35. Those are relatively high compared with Colombo Port on its number of labour, even if major handling work is manual.

(4) Training System

Training system of SLPA is performing mainly at the Mahapola Training Institute in Colombo 15. There are five basic types of training programs: Management, Equipment Operation, Maritime Safety, Cargo Operation and Technical. Recently, there has been an increase in training programs in Maritime and Seamanship (see Table 4.6.9).

Table 4.6.5 Accident by Area

Area	1997	1998	1999	Average	Percent Share
Queen Elizabeth Quay	26	16	20	20.7	14.6%
Bandarayanaike Quay	86	61	73	73.3	51.8%
Jaya Container Terminal	8	22	14	14.7	10.4%
Prince Vijaya Quay	13	4	8	8.3	5.9%
Others	31	27	16	24.7	17.4%
Total	164	130	131	141.7	100.0%

Table 4.6.6 Accident by Age

Age	1997	1998	1999	Average	Percent Share
20-30	32	25	16	24.3	17.2%
31-40	42	36	24	34.0	24.0%
41-50	37	31	51	39.7	28.0%
51-60	37	22	32	30.3	21.4%
No details	16	16	8	13.3	9.4%
Total	164	130	131	141.7	100.0%

Table 4.6.7 Share of Injury by Cadre

	Year 1997	Year 1998	Year 1999
Labourer	55.8%	41.7%	41.2%
Wharf Labourer	21.2%	38.8%	38.2%
Stev. Labourer	2.4%	0.0%	0.0%
Asst. Unit Supdt.	0.6%	0.0%	0.0%
Clerks	0.0%	0.0%	0.0%
Misc. Work asst.	0.6%	1.4%	0.0%
Crane Operator	1.2%	0.0%	0.0%
Driver	3.6%	6.5%	6.1%
Winchman	3.0%	3.6%	3.1%
Admn. Officer	0.6%	0.0%	0.0%
Pilot	0.6%	0.0%	0.0%
Supervisor	0.6%	0.0%	0.0%
Fitter	0.6%	0.0%	0.0%
Coxswain	1.2%	0.0%	0.0%
Signalman	1.2%	0.7%	1.5%
Yard Assistant	0.0%	0.0%	3.8%
Others	6.7%	7.2%	6.1%
Total	100.0%	100.0%	100.0%

Table 4.6.8 Number of Injured Person in Galle

Treatment	1997	1998	1999
Hospital	73	89	35

Table 4.6.9 Training Program in 2000

Stream	No. of Course	No. of Parson
Information Systems	8	119
Container Operation	7	524
Equipment Operation	5	184
Break Bulk Operational Staff	5	58
Technical Welding & Fabrication	7	69
Technical Machine & Fitting	4	45
Fire Safety & Acc. Health	5	103
Management	17	834
Maritime & Seamanship	4+(10)	91+(218)
Total	62+(10)	2027+(218)

Note : (Number) means under preparation.

4.6.4 Operation

(1) Berth Assignment

Basically, berth assignment shall follow the 'first come first service' principal.

1) Colombo

In case of Jaya Container Terminal, previous calling information is classified into 4 steps: 1) monthly schedule, 2) 7 day's notice, 3) 3 day's notice and 4) every 24 hours notice. If deviation of arriving time from that scheduled is within 4 hours, priority of berthing is applied.

2) Galle Port

In Galle Port, berthing priority is assigned for Government Cargo for security reasons upon request. Therefore, flour receives priority berthing when requested by the Food Commissioner's Department.

(2) Gang System

In Galle Port, more than four hundred persons are working in the operations section (see Table 4.6.10). One normal gang consists of 50 workers for storage and 28 workers for direct delivery. Cargo handling at berth-1 and -2 can be carried out by employed workers. But sometimes, private gangs are arranged by shipping agent for supplementing a shortage of workers and shortening the vessels' turnaround time.

Table 4.6.10 Number of Operational Staff at Galle Port

	Year 1990	April 20, 2000
Ass. Unit Superintendents	2	5
Medical center	2	2
Foreman	2	3
Supervising Office	4	6
Labour Supervisors	5	4
Store-Keepers	1	1
Warehouse Clerk	1	3
Tally Clerks	18	11
Clerks	3	8
Minor Employees	3	6
Supervisor(Welfare)	1	1
Driver	1	4
Hatch Tindals	7	6
Winchmen	27	54
Stevedoring Labour	147	51
Wharf Labour	168	237
Gang Leader	7	9
Lighter Section	21	0
Launchmen	7	0
Launch Coxswain	1	0
Launch Driver	1	0
Gearman	1	2
Gear Labour	3	3
Telephone Operator	1	1
Folk Lift Driver	-	3
Delivery Clerk	-	2
Total	434	422

Table 4.6.11 Number of Workers in Gang at Galle Port

Type	Year 2000
Ship Side	
Stevedoring Gang	19
Tindal	1
Winchman	4
Labour	14
Wharf Side	
Wharf Gang	31
Gang Leader	1
Labour	18
Labour for Stacking	12
Direct Delivery	9
Gang Leader	1
Labour	8

(3) Productivity of Cargo Handling

The trade unions and the Ports Authority have set agreed working targets as shown in the following Table.

Table 4.6.12 Agreed Daily Handling Volume of Bagged Cargo

Surveyed Year	1990	2000
Daily Volume per Gang	140 tons	Flour Day shift 140 tons Night shift 160 tons
		Cement Day shift 100 tons Night shift 120 tons

According to handling records on April 20, one SLPA gang (32 labours) handled 101 tons of bagged cement in day shift and 2 gangs (64 labours) handled 242 tons in night shift, while private 3 gangs handled 501 tons in day shift and 2 gangs handled 389 tons in night shift. This data indicates that cargo handling productivity of a private gang is higher than that of a SLPA gang.

(4) Transport Volume

Transport volume per truck is estimated at 10-12.5 ton for bagged cargo and 10-12 ton for bulky cargo. In this case, unit weight of bag is set at 50 kg and number of bags per truck is estimated at 200-250 bags.

Table 4.6.13 Weight of Cargo per Bag

Year	2000
Rice	50 kg
Sugar, Flour, Fertilizer	50 kg

Table 4.6.14 Number of Bags per Truck

Year	1990	2000
Truck	Open truck 200-250 bags Covered truck 100-150 bags	200-250 bags Maximum 500 bags

Bulky Cargo such as clinker and gypsum is handled by a grab and delivered by trucks. The Galle Cement Co. prepared 16 trucks for this transport.

Table 4.6.15 Cargo Weight of Bulky Cargo per Truck

Year	2000
Clinker, Gypsum	10 - 12 tons

4.6.5 Document Control System at Galle Port

All documents necessary for removal of vessel and cargo are written paper and not digitalized yet.

1) Reservation of vessel calling

Necessary documents listed below are controlled by Ass. Harbour Master. All documents other than P&I are submitted by hand, fax or mail. P&I is kept on board.

- a. ETA(Estimated Time of Arrival) information by 72, 48, 24 hours
- b. Dangerous cargo declaration (IMO rule)
- c. P&I (protection & indemnity) cover for collision, wreck removal & marine pollution (IMO rule)
- d. Trading certificate should be valid (IMO rule)
- e. Ship details – length, draught, etc.

2) Reservation of cargo handling

Necessary documents listed below are controlled by operations section

- a. Manifest
- b. Hatch plan
- c. Receipt of payments (pilotage, harbour due, storage charge, wharfage, handling charge, etc.)
- d. Delivery order (agreed by finance section and customs)

4.6.6 Customs Clearance

Galle Customs Office is a branch of Sri Lanka Customs. It covers SLPA port, fishery one and Galle Harbour, including yacht harbor. Working hours of the office are normally from 8:00 to 16:45. But it is extendable by request before 16:00. Current total number of staff is 24 and details are shown in following Table 4.6.16.

Table 4.6.16 Staff of Customs Office in Galle

Grade	Number
Superintendent Customs	1
Ass. Superintendent Customs	1
Ass. Preventive Officer	1
Chief Inspector	1
Inspector Grade I	4
Inspector Grade II	12
Marine Staff	4

4.6.7 Current Issues and Problems at Galle Port

The current management and operation system at Galle Port is old fashioned. Essential areas where improvement is necessary are identified as follows:

- (1) Certain essential procedures such as bonding are presently handled in Colombo. In the event of a problem, agents are not able to settle the matters in Galle. Necessary formalities in this connection should be decentralized.
- (2) A shipping liner cannot assign efficient vessels to Galle Port which does not prepared suitable equipment. A cargo handling cost does not become low due to slow operation, even if the unit price is set up cheaply. High efficiency vessels do not call a port mainly because the time lags in loading and discharging. As a result only old vessels call and crane operation is not speedy. That is obviously a vicious circle.
- (3) The present working system is 2 shifts and the standard operation volume is set up, while the actual handling volume does not exceed this to any significant extent. It is recognized that usually night shift is not operated in full time.
- (4) Clinker and gypsum are imported as bulk cargo in Galle Port. Those are discharged to trucks of the berth from a vessel and transported to the factory directly. Room for improvement is observed in terms of the capacity of grab, interval of crane and prevention of cargo overflow etc. due to present use of old vessels and trucks.
- (5) Flour and cement are discharged as bagged cargo. The warehouse in the port is the delivery base of flour for the three southern provinces. The transporting work is done manually from the berth to the warehouse; this type of operation is very inefficient. Also, as for cement, bags are easily torn, which makes discharging work environmentally hazardous. The quality of the bags needs to be improved. For increasing progress, private gangs are often appointed from outside. In case of bagged cargo, environmental reform and productivity improvement are areas to be improved for achieving an efficient operation.

4.7 Bottlenecks of Galle Port

4.7.1 Shortage of Berths

There are two berths and a new berth under construction that will be completed in February of 2001. In recent years, cargo throughput of Galle port has been increasing owing to the rapid increase of import of cement related materials such as bulk cement, bag cement, clinker and gypsum. Because of this rapid increase, the number and size of vessels calling at Galle port have also been increasing.

As a result, the waiting time of vessels and berth occupancy ratio have been increasing, and fuel tankers stopped calling at the Port after June of 1999 because of the high demurrage cost. Now, fuel is transported by lorry from Colombo which is an additional burden to the already congested A2 road. In addition to the present throughput of cargo, a new packing plant will start operation from July of 2000 and one new cement factory is under construction and will be put into operation in 2002. Even if the new berth begins to operate, the capacity of 3 berths will still be insufficient to handle cargo optimally.

4.7.2 Shallow Draught of Berths

The maximum draught of vessels which can enter the Port is currently limited to 7.3 m. The urgent dredging work is now being carried out and depths of water facilities and berths of the Port will be maintained to -8.9m. This depth can accept vessels of 8m draught which is equivalent to 10,000 D.W.T. vessels. Compared with the standard draught of cargo vessels in international maritime transport, it is shallow and shipping companies and shippers cannot enjoy the scale of economies.

Even in Colombo Port, draught of berths for bulk carriers is limited. The maximum draught is a mere 10.4m, which is also behind the international standard.

4.7.3 Restriction on Length of Vessels Calling at the Port

Because of the narrow turning basin, the length of vessels which can enter the Port is restricted to less than 130m. This length is almost equivalent to 10,000 D.W.T. vessel type. This situation also hinders optimum maritime transport.

4.7.4 Increased Waiting Time and Low Cargo Handling Productivity

Because of lack of berths, low cargo handling productivity and increase of cargo handled, the waiting time of vessels for berthing is increasing sharply. The average waiting time per vessel reached 54 hours per vessel in the second half of 1999, which is the double the figure in the first half of 1999. Because of high demurrage cost, fuel tankers stopped calling at the Port in June of 1999.

Gross cargo handling productivity by commodity is shown in Table 4.7.1. These figures show the average productivity which is calculated by discharged and loaded cargo volume divided by

berthing hours/days. The productivity of bagged cement is considerably lower than that of Colombo Port which is 50 t / hr / ship and the productivity of bagged flour is lower compared with other bagged cargoes.

To cope with the rapid increase of cargo volume handled at Galle Port, measures to enhance the cargo handling productivity have to be taken urgently, otherwise Galle Port may lose cargoes such as fuel oil.

Table 4.7.1 Gross Cargo Handling Productivity in 1999

Commodity	t / hr / ship	t / day / ship	Handling Equipment
Bagged Cement	31	748	Ship gear, net sling
Bagged Flour	15	370	Ship gear, net sling
General Cargo	4	95	Ship gear, net sling
Bulky cement	161	3,859	Pipe line
Clinker	45	1,102	Ship gear, grab
Gypsum	45	1,972	Ship gear, grab
Fly Ash	38	916	Ship gear, grab
Fuel Oil	34	818	Pipe line

Source: JICA Study Team

4.7.5 Difficulty of Vessel Maneuvering in South-west Monsoon Season

In the south-west monsoon season high swell reaches the inner Galle Bay. Before entering the port, vessels have to change direction by 120 degrees. When high swell reaches the turning basin in front of the entrance of the Port, a tug cannot assist the vessels to enter the Port and vessels have to change the direction by themselves. And also vessels have to enter the approaching channel at a speed of 6 – 7 knots. Under this condition the stopping distance is not sufficient.

4.7.6 Restriction of Night Navigation in the Approach Channel

Because of lack of light buoy in the approaching channel, navigation of the channel is prohibited at night. At present, the number of vessels calling at Galle Port is limited and the restriction of night navigation doesn't cause any problem. But in the future when the number of vessels becomes large, the introduction of a night navigation system may have to be considered.

4.8 Present Financial Condition

4.8.1 Financial characteristic of SLPA

Colombo Port accounted for 95% of SLPA's total revenue and 96% of its total expenditure in 1999. The administration cost of the central office was included among the expenditures of Colombo Port.

(1) Revenue Structure

Local container activity accounted for almost half of the total revenue of Colombo Port.

The revenue structure of Colombo Port is shown in Table 4.8.1. Cargo Handling charges generated the most revenue, 65% of the total. Dockage, wharfage, storage and etc accounted for 15% of total revenue. Navigation, Harbour, Pilotage and Tugs charges such as Light dues, Entering dues, Harbour tonnage dues, Pilotage, Professional pilot fees, and Tug service comprised 7% of the total. The remaining portion mainly financial revenue represented 9%.

Local container handling and storage accounted for 49% of the total revenue. On the other hand, only 16% came from transshipment container handling and storage despite the fact that this type of cargo represented 69% of the total handling volume (TEU). Revenues from conventional cargo represented 11% of the total.

(2) Expenditure Structure

The expenditure structure of Colombo Port is shown in Table 4.8.2. Operational section costs generated the most expenditure, 34% of the total. Costs for a maintenance and repair section accounted for 14% of total expenditure. Costs for administration section comprised 24% of the total. Interests of foreign loan comprised 9% of the total. The remaining portion financial expenditure represented 19% such as tax, debt and etc.

By item, Personnel costs represented the largest expenditure (32% of the total), followed by depreciation costs (22%), tax (19%), Interests of foreign loans (9%) and Maintenance (5%). Other expenditures such as fuel, welfare, debts and etc represented 13% of remaining portion.

4.8.2 Finance characteristic of Galle Port

Revenues and expenditures from Galle Port represented only 1% of SLPA's total revenues and expenditure.

(1) Revenue Structure

The revenue structure of Galle Port is shown in Table 4.8.1. The main revenues of Galle Port are derived from handling import cargoes related to cement such as bagged cement, bulk cement, clinker and gypsum. Also, some portion of the revenue was derived from domestic cargoes such as bagged flour.

Stevedoring charges generated the most revenue (74% of the total), followed by Navigation, Harbour, Pilotage and Tags charge (10%), port infrastructure (5%), and others (11%). Others were financial revenues, rent and lease of land, and so on.

(2) Expenditure structure

The expenditure structure of Galle Port is shown in Table 4.8.2. Most of the expenditure was derived from operation costs (56% of the total), followed by administration costs (29%) and maintenance and repair costs (15%). There were no outstanding foreign loans.

By item, 83% of expenditures were for personnel costs. Depreciation costs were only 5% (very low when compared to Colombo Port), because the port facilities have almost depreciated in Galle Port. Other expenditures such as fuel, maintenance, welfare, debts etc accounted for 12% of the remaining portion.

4.8.3 Tariff

Revenues of SLPA are based on their tariff. The SLPA's tariff system can be subdivided into 5 sections such as:

- navigation and related services
- stevedoring and harbour tonnage dues
- landing and delivery and shipping
- general services and facilities
- hiring services

Table 4.8.3 provides a summary of the tariff structure.

Charges for navigation and related services include Light dues, Entering dues, Pilotage, Professional pilot fees, Tug service, dockage. The tariff is divided into two rates by 3,000 gross ton of ship.

Stevedoring and harbour tonnage dues include Loading / Discharging, Stuffing / Destuffing, Storage, Tonnage dues and etc. Some tariff levels differ by port. Volume rebates of up to 20% are allowed for transshipment containers.

Landing, delivery and shipping tariff is comprised of Wharfage, Wharf handling charge, etc. If stevedoring work is done by private companies a stevedoring charge is also applicable.

Charges for general services and facilities are for using facilities, and for various services such as fire fighting service, supply of fresh water, railway facilities etc.

Hiring services refer to the hiring of forklifts, trucks, cranes, and trailers.

The charge for the transshipment container handling is very low compared to local container handling. The stevedoring charge for transshipment containers is half that of local containers and more over wharf handling and wharfage are not applicable.

Table 4.8.1 The revenue structure of the port of Colombo and Galle(1999)

		Colombo		Galle	
		1,000Rp	%	1,000Rp	%
Port activity	Navigation,Harbour,Pilotage & Tags				
	Light dues	210,369		770	
	Entering dues	261,169		3,674	
	Harbour tonnage dues	126,351		11,472	
	Pilotage & detention fees	279,491		2,054	
	Pilot launch charge	0		2,728	
	Tug charge	154,423		2,251	
	Sub-total	1,031,803	7%	22,949	10%
	Port Infrastructure				
	Stream anchorage	5,125		28	
	Dockage	319,349		10,731	
	Warfage-import	285,253			
	Warfage-export	94,655			
	Storage-conventional	536,071	4%		
	Storage-dom container	909,480	6%		
	Storage-trn container	44,502	0%		
	Storage-trn conventional	3,806	0%		
	other	436			
	Sub-total	2,198,677	15%	10,759	5%
	Cargo Handling				
	Container Steve(Dom)				
	Container(load & discharge)	4,269,503			
	Container(shift)	139,004			
	Stuffing, destuffing	76,580			
	other	168			
	Wharf handling	1,030,708		1	
Sub-total	5,515,963	38%	1		
Container Steve(Trn)					
Container(load & discharge)	2,358,915				
other	13,335				
Sub-total	2,372,250	16%			
Conventional Steve(Dom)					
loading/discharging	1,247,448		135,181		
Wharf handling	375,301		30,557		
Sub-total	1,622,749	11%	165,738	74%	
Conventional Steve(Trn)					
Convent (Load/Discharge)	8,083	0%			
Total	9,519,045	65%	165,738	74%	
Other service					
	215,360	1%	0	0%	
Other	39,787	0%	2,262	1%	
Port Estate(Rent/Leases)	75,506	1%	9,167	4%	
Financial	1,327,879	9%	14,619	6%	
From SAGT	143,823	1%	0		
All-total	14,551,880	100%	225,495	100%	

Source: Sri Lanka Port Authority

Table 4.8.2 The expenditure structure of the port of Colombo and Galle(1999)

		Colombo		Galle	
		1000Rs	%	1000Rs	%
Operation	Wage,salaries & allowance	1,598,107		96,212	
	Fuel, Electricity, etc	239,442		754	
	Depreciation	2,049,708		6,458	
	Maintenance	17,428		3,036	
	other	20,976		0	
		3,925,661	34%	106,460	56%
Maintenance	Wage,salaries & allowance	1,003,551		26,135	
	Fuel, Electricity, etc	15,431		103	
	Depreciation	36,806		422	
	Maintenance	540,425		1,449	
	other	27,172		0	
		1,623,385	14%	28,109	15%
Administration	Wage,salaries & allowance	1,057,788		35,840	
	Fuel, Electricity, etc	123,990		5,060	
	Depreciation	439,947		2,305	
	Maintenance	62,345		1,136	
	Welfare	46,199		2,172	
	other	1,028,131		9,226	
		2,758,400	24%	55,739	29%
All section	Wage,salaries & allowance	3,659,446	32%	158,187	83%
	Fuel, Electricity, etc	378,863	3%	5,917	3%
	Depreciation	2,526,461	22%	9,185	5%
	Maintenance	620,198	5%	5,621	3%
	Welfare	46,199	0%	2,172	1%
	other	1,076,279	10%	9,226	5%
		8,307,446	72%	190,308	100%
Interest of foreign loans	1,008,379	9%	0	0%	
Tax	2,209,730	19%	0	0%	
Total	11,525,555	100%	190,308	100%	

Source: Sri Lanka Port Authority

Table 4.8.3 Tariff Structure of SLPA(2000) for Galle Port

Section	Type of Tariff	Charging Base	Tariff(in US\$)		Remarks	
Navigation and Related Service	Light Dues	per 100GT	3.40			
	Entering Dues	per 100GT	4.55		Over hour dues should be paid in addition	
	Over Hour Dues	per 100GT	2.30		Over 96h to 288h	
	Pilotage (in and out)	per 100GT	4.55		There are cancellation and detention fees	
	Professional Pilot Fees	per movement	24.00(day) 36.00(night)		Vessels up to 30,000DWT	
	Tug service	per tug movement	161.00			
	Dockage	per 100GT per hour	0.22		There is a penalty charge occupying a berth after completion discharging / loading.	
Stevedoring and harbour Tonnage Dues	Container Handling Domestic Discharging / loading	Per box	Laden	20feet	40feet	By SLPA gantry
			Empty	140.00	212.00	
			Laden	100.00	151.00	By ship's gear
	Empty	79.95	121.20			
	Storage on containers	Per box day	Empty	6.95	13.85	3days free after up to 31days
			Laden Export	5.20	10.40	7days free
	Container Transshipment Transshipment / re-stow container composite stevedorage	Per box		71.30	109.50	
	Bagged & General cargo Discharging / loading	Per ton		3.10		Non irritant Irritant flour on coastal services
				4.40		
	Bulk cargo Dry bulk (manual) (Mechanical) Liquid by pipeline	Per ton		5.00		Depend on daily average output
			2.00 - 5.00			
Harbour Tonnage Dues	Per box	Import	8.00	16.00	For container	
		Export	4.00	8.00		
	Per ton	Import	0.40		For conventional	
		Export	0.20			
Landing & Delivery shipping	Wharf handling charge		B/B LCL Per ton	FCL 20feet per box	FCL 40feet per box	
	Grain & grain products and sugar in bag	Import	0.29	8.70	17.40	
		Export	0.92	27.60	55.20	
	Fertilizer in bag and milk food	Import	0.47	14.10	28.20	
	Tea, natural rubber, Coconut & coconut products	Export	0.51	15.30	30.60	
		Import	1.59	47.70	95.40	
	Textile, hang garments	Export	1.72	51.60	103.20	
		Import	0.85	25.50	51.00	
All other cargo	Export	0.92	27.60	55.20		
	Import	0.22	6.60	13.20	There are some exception about petroleum products	
Wharfage	Export	0.23	6.90	13.80		

Source: Tariff 2000 by Sri Lanka Port Authority

Part 2 SHORT-TERM DEVELOPMENT PLAN

Chapter 5 Development Potential in the Southern Area

As described earlier, the present situation of the area is somewhat retarded. Nonetheless, there already exist a certain agglomeration of economic activities (although these activities mainly comprise small/medium scale manufacturing), and there is potential for natural, cultural and human resources to be further developed. In this regard, increasing production and employment through optimum use of existing and indigenous resources should be the foremost priority. In addition, introduction of external resources to develop industries as a driving force for regional development and to produce goods primarily for exports should be another priority.

5.1 Regional Development Policy

Objectives of the southern area development should be stressed as follows.

- To reduce the regional disparity and the various demerits and inconveniences such as congestion and migration caused by an excessive concentration of economic activities in Colombo District and its vicinity, and to contribute to well balanced national land development.
- To strengthen the economic ties with the Colombo region by burden sharing with the region, and to serve as a driving engine to contribute to realizing an open and competitive economy the context of globalization.

To achieve the objectives, strategies for the southern area development should be pursued as follows.

- (1) For the enhancement of production and employment through optimum use of existing natural and human resources, local small/medium manufacturing industries such as tea production and garments as well as tourism industry which have a relatively large potential in the area should be further developed.
- (2) More sophisticated, demand and market driven and value-added oriented industries such as electronics and automobile rather than conventional ones should be accelerated.
To make it easier to introduce these rather new industries in the region, further incentives for private sector participation should be taken into account.
- (3) Improving accessibility to the Colombo region is crucial for creating a symbiotic economic relationship. Infrastructure development, especially in the fields of road network, electricity and telecommunications, is of utmost importance to cope with the requirements.
- (4) Development of port facilities in the area which directly connect the area and the outer world is, needless to say, urgently needed.

The Sri Lanka Government has paid serious attention to the southern area development. The Presidential Task Force was established in September 1995 as 'an interim measure to initiate development work very quickly until such time the institutional mechanism, The Southern Development Authority (SDA), was formally incorporated by an Act of Parliament.' 'A New

Future for Ruhuna, a Regional Strategy for Development of the Southern Area of Sri Lanka' was also compiled by the Ministry concerned at around the same time.

The Government has stipulated the various short and medium term development and/or investment plans. For reference, regional development policies and projects related to the southern area development are indicated below.

5.2 Future Trends in Major Sector Development

SDA predictions of sector contribution in the area in short term are given in Table 5.2.1. The analysis indicates a significant increase in manufacturing sector from 11.8% in 1999 to 14.9% in 2002. Contribution from agriculture sector shows a decline from 26.1% to 24.0% by the end of the plan period, while similarly, trade and other services sub sector will fall in contribution during the same period in percentage terms as well.

Table 5.2.1 Southern Area Output – Composition of Sector Contribution

SECTOR	1999	2000	2001	2002
Agriculture	26.1	24.9	24.5	24.0
Mining	1.0	1.4	1.4	1.5
Manufacturing	11.8	14.1	14.3	14.9
Construction	9.1	8.9	8.8	8.8
Transport & Communication	9.6	9.4	9.4	9.3
Electricity & Gas	1.8	1.8	1.9	1.9
Trade	20.3	19.8	19.7	19.6
Banking	8.0	7.9	8.2	8.3
Other Services	12.3	11.8	11.8	11.7
Total	100.0	100.0	100.0	100.0

Aside from the regional development programmes/projects mentioned in the above section, sector-wise projects which are not necessarily focussing on but are partially or closely related to the southern area development are pipe-lined as indicated in 'The path to Development... Investment Profile 2000-2004'. Some typical projects that might seriously affect the regional development are given below.

5.2.1 Agriculture

(1) Plantation Reform Project

This project provides long-term loans to privatized plantation companies and helps improve environmental conditions in the project area including Galle and Ratnapura Districts. The total investment for 1999-2001 is Rs. 6466 million. Target output is estimated in replanting 1,050 ha of tea, 2040 ha of rubber and 930 ha of coconut, while yield is expected to increase by 35%, 25% and 60% respectively.

5.2.2 Industry

(1) Industrial Estate Development Programme

As one of the three supra-class industrial estates project, a special industrial estate for the tannery and leather processing industries has been established on 105 acres of state land at Bata-atha in Hanbantota District. Project cost estimated at Rs. 210million will be funded with UNDP and NORAD aid.

(2) Koggala EPZ

In addition to the 15 existing enterprises in Koggala EPZ, 17 newly approved projects, 6 of which are expansion projects of existing enterprises, will commence shortly. As indicated in application to BOI, main business of the enterprises is in the field of textile and electronics, and the number of employees in the EPZ is expected to double.

(3) 50 Garment Factory Programme

The 50 Garment Factory Programme (50 GFP) announced in 1998 envisages 20 new garment factories in Southern Province and the balance in districts outside the Western and Southern Provinces. The factories set up under this programme are accorded BOI status and are entitled to an attractive package of incentives and concessions. Each project requires a minimum investment of Rs. 20 million and should employ a minimum of 250 employees.

5.2.3 Tourism

(1) Tourism Infrastructure Development Project

To improve existing infrastructure facilities and create a pollution free environment from Marawila (about 15km north to Negonbo in the Western Province) to Unawatuna (adjacent to Galle city) on the west and south coast, a feasibility study on this project commenced in 1999. The project components include; 1) development of water and solid waste disposal systems, 2) Improvement of storm water drainage systems and improvement of roadways, 3) introduction of a systematic garbage disposal system. Estimated total cost is Rs. 522 million to be funded by UNDP and World Tourism Organization.

5.2.4 Other Sector

(1) Energy

- 1) Development of electricity generation to meet the demand for electricity is sought in the southern area. One of the projects is identified as follows,
 - 2×20MW Medium Term Power Plants at Matara and Anuradhapura on BOO basis is under negotiation, which is expected to generate 334 GWh per year for the next ten years.

2) Transmission and Grid Substation Development Project with the Japan Bank for International Cooperation (JBIC) assistance will cover the construction of some grid substations including in Ambalangoda and Galle in Galle District and a new 132 kV Line will be installed connecting to Galle City as well.

(2) Telecommunication

Rural Telecommunications Development Project in Galle District will be implemented with collaboration from SIDA for the supply, installation and commissioning of a fixed wireless local and telephone service for more than 1500 subscribers.

5.2.5 Transportation

(1) Southern Highway Construction Project (Southern Transport Development Project)

To provide a bypass to the existing Galle Road (A2 Road), which suffers from deteriorating traffic and safety conditions, and to provide a catalyst for development in the economically deprived the southern area, a construction project of a new highway, linking Colombo with Galle and Matara has been planned. The project will be co-financed by JBIC and the Asian Development Bank (ADB), and it consists of the following components, namely; four lanes road of 33 km from Kottawa (south east of Colombo) to Dogangoda out of 75 km of JBIC portion, and 53km of ADB portion of two lane road to Matara including 4km of Galle port access road. Total investment is estimated at Rs. 21.3 billion or about US\$ 300 million and opening of the highway is expected before 2005.

Realization of the project would bring about huge effects on the southern area as follows,

- Promotion of socioeconomic development in the south area
- Provision of an alternative route to reduce traffic congestion, travel time, vehicle-operating costs and accidents for road users on the existing Colombo-Galle-Matara road
- Developing the hinterland through improvement of transport facilities

This project would expand the probability that some portion of cargo handling will be shifted from Colombo Port to Galle Port after completion of the latter port cum the Highway due to the benefits mentioned above.

Chapter 6 Demand Forecast

When conducting demand forecast, the entire cargo volumes through the three major ports, viz. Colombo, Galle and Trincomalee, were first estimated on a commodity-wise basis and then the volumes of cargo to be potentially handled at Galle Port were determined. For cargoes generated from or destined to the southern area most were allocated to Galle Port (long-sea-route container cargoes were excluded.) due to its economical inter-modal transport options. The capacity of Colombo Port in conventional cargo handling was also taken into account, though it seems unlikely to be saturated before the year 2009 if Galle Port is developed.

6.1 Future Socioeconomic Framework

The future socioeconomic framework concerning population and GDP, which are necessary for the study of the demand forecast, was assessed in this Section.

6.1.1 Population

(1) Sri Lanka

Population in the future has been forecasted by various organizations as shown in Table 6.1.1. Further, following points have been highlighted concerning trends of past and future population.

- The average annual growth rate from 1980 to 1989 was 1.46 % according to the "Annual Report" by the Central Bank of Sri Lanka.
- The average annual growth rate from 1989 to 1998 was 1.23 % according to the "Annual Report 1998" by the Central Bank (Source: Department of Census and Statistics, Ministry of Finance and Planning in Sri Lanka).
- The average annual growth rate will be 1.01 % from 1998 to 2005 and 0.86 % from 2005 to 2010 based on "Demographic Projections for Sri Lanka Dec.1998" by Population Information Center, Ministry of Health and Indigenous Medicine.

Table 6.1.1 Future Population Forecast by Relevant Organizations

(In thousand)

	Population in Sri Lanka			Growth Rate		
	(a)	(b)	(c)	(a)	(b)	(c)
1995			18,100			
1996			18,300			1.10
1997			18,600			1.64
1998			18,800			1.08
1999		18,968	19,000			1.06
2000		19,117	19,200		0.79	1.05
2001	19,015	19,370	19,400		1.32	1.04
2002		19,564	19,600	1.01	1.00	1.03
2003		19,759	19,800	1.01	1.00	1.02
2004		19,954	20,000	1.01	0.99	1.01
2005		20,151		1.01	0.99	
2006	19,977	20,317		1.01	0.82	
2007		20,487		0.90	0.84	
2008		20,663		0.90	0.86	
2009		20,844		0.90	0.88	
2010		21,028		0.90	0.88	
2011	20,873	21,168		0.90	0.67	
2012		21,306		0.78	0.65	
2013		21,441		0.78	0.63	
2014		21,575		0.78	0.62	
2015		21,706		0.78	0.61	
2016	21,690	21,799		0.78	0.43	
2017		21,895		0.97	0.44	
2018		21,994		0.97	0.45	
2019		22,094		0.97	0.45	
2020		22,195		0.97	0.46	
2021	22,324	22,260		0.97	0.29	

Source : (a) Statistical Abstract 1997 by Department of Census and Statistics

(b) Population Information Center, Ministry of Health and Indigenous Medicine 1998

(c) The Economist Intelligence Unit Limited (EIU Country Forecast, 4th Quarter 1999),

UK

The figures shown in the above table regarding the future forecast of population are more or less similar. Therefore, the annual growth rate of 1.01 % from 1998 to 2005 and 0.86 % from 2005-2010 are adopted based on "Demographic Projections for Sri Lanka Dec.1998" by the Population Information Center, Ministry of Health and Indigenous Medicine, which is the latest information in hand.

The future population in 2005 and 2010 can be estimated based on the adopted growth rate.

Table 6.1.2 Population in 2005 and 2010 in Sri Lanka

(In thousands)

Year	2005	2010
Population	20,151	21,028

Table 6.1.3 Future Growth Rate of Population in Sri Lanka

Year	1998-2005	2005-2010
Growth Rate	1.01 %	0.86 %

(2) Southern Province

Prior to an assessment of the annual growth rate of population in the Southern Province, following points are taken into account.

- The average annual growth rate in the Southern Province from 1989 to 1998 was 1.25 %, while that of Sri Lanka during the same period was 1.23 % according to the "Annual Report 1998" by the Central Bank of Sri Lanka (Source: Department of Census and Statistics, Ministry of Finance and Planning in Sri Lanka).

- According to "Demographic Projections for Sri Lanka Dec.1998" by the Population Information Center, Ministry of Health and Indigenous Medicine, the future average annual growth rate of population in Sri Lanka is as follows:

1.01 % from 1998 to 2005
0.86 % from 2005 to 2010

The above figures are adopted in this study.

- The share of population in the Southern Province compared to that of the whole of Sri Lanka was constant and approx.13 % from 1989 to 1998 as shown in Table A.6.1.

Based on the above, a growth rate comparable to that of the national population is adopted for the Southern Province. Future population in the Southern Province can be estimated using the adopted growth rate.

Table 6.1.4 Future Population in 2005 and 2010 in the Southern Province
(In thousands)

Year	2005	2010
Population	2,618	2,733

Table 6.1.5 Future Growth Rate of Population in the Southern Province

Year	1998-2005	2005-2010
Growth Rate	1.01 %	0.86 %

6.1.2 Gross Domestic Product (GDP)

(1) Sri Lanka

The future annual growth rate of GDP was forecasted in the "Six Year Development Programme 1999-2004 / Macro Framework & Sector Review" published in Nov.1998 by the Department of

National Planning, Ministry of Finance & Planning in Sri Lanka, "Master Plan Study for Industrialization and Investment Promotion in the Democratic Socialist Republic of Sri Lanka" published in Aug. 1999 by JICA / Ministry of Industrial Development in Sri Lanka and "Country Forecast, 4th Quarter 1999, Sri Lanka" by The Economist Intelligence Unit Limited, United Kingdom, as shown in Table 6.1.6.

The following points are highlighted in order to assess the future growth rate of GDP in Sri Lanka:

- The average growth rate of GDP in the "National Account of Sri Lanka 1998" by Department of Census and Statistics, Ministry of Finance and Planning was 5.28 % from 1990 to 1998;
- According to the "Six Year Development Programme 1999-2004", it is assessed that economic growth (GDP) would reach 7.0 % by the year 2004 with an average growth rate of about 6.5 % during the six year period due to ;
 - ① The growth in the industry and service sectors with the contribution of industry to GDP likely to exceed 35 % by the end of the period,
 - ② Improvement of productivity in the agriculture sector,
 - ③ Employment opportunities in the industry and service sectors expanding faster than the growth of the labour force.
- The future annual growth rate indicated in the "Master Plan for Industrialization and Investment Promotion in the Democratic Socialist Republic of Sri Lanka, Aug. 1999" is 6.2 % from 1999 to 2004 and 7.2 % from 2005 to 2010 respectively.
- According to "The World in 2000", the future annual growth rate in the ROW countries including Sri Lanka is 5.0~6.5 % from 1996 to 2000 and 4.3~6.6 % from 2001 to 2010 respectively.

Table 6.1.6 Future Growth Rate of GDP by Relevant Organizations

Year	Growth Rate (%) (a)	Growth Rate (%) (b)	Growth Rate (%) (c)	Growth Rate (%) (d)
1995			High/Low	5.5
1996			6.5 / 5.0	3.8
1997			6.5 / 5.0	6.4
1998	5.0		6.5 / 5.0	4.7
1999	5.6	5.5	6.5 / 5.0	3.7
2000	6.0	5.8	6.5 / 5.0	4.4
2001	6.5	6.4	6.6 / 4.3	5.4
2002	6.5	6.4	6.6 / 4.3	6.3
2003	6.5	6.3	6.6 / 4.3	6.2
2004	7.0	6.6	6.6 / 4.3	6.5
2005		6.8	6.6 / 4.3	
2006		6.9	6.6 / 4.3	
2007		7.2	6.6 / 4.3	
2008		7.3	6.6 / 4.3	
2009		7.5	6.6 / 4.3	
2010		7.6	6.6 / 4.3	
2011-2020			6.5 / 4.0	

Source:

- (a) National Planning Department, Ministry of Finance and Planning, 1998
- (b) Master Plan Study for Industrialization and Investment Promotion in the Democratic Socialist Republic of Sri Lanka, Aug. 1999 (JICA / Ministry of Industrial Development)
- (c) The World in 2020 by Organization for Economic Co-operation and Development (OECD) - GDP for Rest of the World (ROW), 1997
- (d) The Economist Intelligence Unit Limited (EIU Country Forecast, 4th Quarter 1999), United Kingdom

The growth rate assumption by source (a) and (b) is similar and more realistic. Therefore, the annual growth rate of GDP in Sri Lanka is estimated based on the forecast by JICA / Ministry of Industrial Development as shown in Table 6.1.7.

Table 6.1.7 Future Annual Growth Rate of GDP

Year	1998-2005	2005-2010
Growth Rate	6.2%	7.2%

The future GDP at 1990 constant prices in 2005 and 2010 is shown in Table 6.1.8, based on past records released by the National Planning Department, Ministry of Finance and Planning in Sri Lanka.

Table 6.1.8 Future GDP at 1990 Constant Prices in 2005 and 2010

(Rs. Million)

Year	2005	2010
GDP	730,800	1,034,600

The future GDP and sectorial GDP at 1982 constant prices in 2005 and 2010 are shown in Table 6.1.9, based on "Master Plan Study for Industrialization and Investment Promotion in the Democratic Socialist Republic of Sri Lanka, Aug. 1999".

Table 6.1.9 Future GDP and Sectorial GDP at 1982 Constant Prices

(Rs. Million)

Year	2005	2010
GDP(Total)	297,916	423,743
Agriculture	40,793	44,424
Manufacturing Industries	72,396	119,260
Non-Manufacturing Industries	28,492	40,112
Services	156,235	219,947

(2) Southern Province

The average annual growth rate of the GDP of the Southern Province from 1990 to 1997 was 5.73 % as shown in Table A.6.2, while that of Sri Lanka was 5.28 % from 1990 to 1998 according to the "National Account of Sri Lanka 1998" by the Department of Census and Statistics, Ministry of Finance and Planning.

Data for the future is not available. Therefore, it is assumed that the future annual growth rate of the GDP in the Southern Province will follow a pattern similar to that of Sri Lanka with a variation of 0.5 %, which is the same difference observed between the growth rate in Sri Lanka and that of the Southern Province in the last decade.

Table 6.1.10 Future Annual Growth Rate of GDP

Year	1998-2005	2005-2010
GDP	6.7%	7.7%

The provincial GDP at 1990 constant prices in 2005 and 2010 is estimated as follows.

Table 6.1.11 Future Provincial GDP at 1990 Constant Prices in 2005 and 2010

(Rs. Million)

Year	2005	2010
GDP	73,560	106,591

6.2 Methodology of Cargo Demand Forecast

Generally, two methods are used to forecast the cargo volumes to be handled at ports.

The first method is to forecast the total volumes as a whole by statistical correlation between the cargo volumes and socioeconomic indices of the hinterland or of the nation, or by the time series analysis (hereinafter, this method is called "the total demand forecast")

The second method is a cumulative method, which forecasts the volumes of each major commodity group individually based upon the forecast of supply and demand in the hinterland, or based upon analysis of the past cargo volume trend. It is necessary to consider the information about industries to be located in the hinterland. The total cargo volumes are then forecasted by a summation of the forecast volumes for each commodity (hereinafter, this method is called "the commodity-wise demand forecast").

In this Study, the commodity-wise demand forecast is used to predict the local trade cargoes (imports/exports) because the cargo volumes handled at Galle Port are small.

Future cargo demand is forecasted as follows:

- Import/Export cargo volumes in Sri Lanka are forecasted based on the "Port Statistics Sri Lanka" by Sri Lanka Ports Authority;
- Future cargo demand in Sri Lanka is estimated as a whole. Then, the forecast cargo volumes are allocated based on the roles/functions of Colombo and Galle Port.

6.3 Forecast Cargo Volumes

Import/export cargoes are categorized with non-containerizable cargoes and containerizable cargoes. Containerizable cargoes comprise break bulk cargoes which might be handled as container cargoes.

Following points are highlighted especially for containerizable cargoes:

- The major industries in the Southern Province are overseas trade-oriented industries and the new Galle port would provide the shortest and advantageous access to ocean-going vessels for import of raw or intermediate materials and exports of finished goods;
- A lot of perishable or other foodstuffs such as onions, potatoes, fruits and rice have been imported from the neighboring countries including India and Pakistan on short-sea routes mostly through Colombo Port and distributed throughout the country. The new Galle Port would provide the shortest landing place in the Southern Province for these cargoes while keeping them fresh and saving land transport costs.

As for container cargoes, potential calling at Galle Port has been investigated by analyzing detailed container cargo movement at Colombo Port. The results are shown in Table A.6.3 – A.6.6.

6.3.1 Import Cargoes

(1) Non Containerizable Cargoes

1) Wheat / Flour

Sri Lanka has no domestic production of wheat, and all wheat consumed in the country is imported. The volumes handled at Colombo Port and Galle Port are decided based on the trade and coastal transportation roles of three ports; Colombo, Galle and Trincomalee, where the flour mills are located.

a) Future Consumption in Sri Lanka

The average annual per capita consumption of flour in Sri Lanka from 1991 to 1996 was 36 kg/year according to "Food Balance Sheets 1991-1996" by the Department of Census and Statistics, Ministry of Finance and Planning. The future consumption of flour in Sri Lanka is calculated on the assumption that per capita consumption in Sri Lanka will increase by 5%/year up to 40 kg/year based on the average growth rate from 1991 to 1996 and remain at 40 kg/year after that. The figures are as follows:

806,000 M.T.	(2005)
841,000 M.T.	(2010)

The volumes imported for wheat in Sri Lanka are calculated based on the future consumption of flour in Sri Lanka, as follows:

1,240,000 M.T.	(2005)
1,294,000 M.T.	(2010)

b) Future Consumption in the Southern Province

Future consumption of flour in the Southern Province is calculated on the same basis as that of Sri Lanka, as follows:

105,000 M.T.	(2005)
109,000 M.T.	(2010)

c) Volumes handled at Galle Port

The imported volumes of wheat/flour at the Port in Sri Lanka are shown in Table A.6.7. Galle Port has been well-used for the import of flour due to the remote distance from Trincomalee. Therefore, the future import volumes of flour are calculated on the assumption that all flour consumed in the Southern Province will in future be provided by coastal transport, if the Port is available. The figures are as follows:

105,000 M.T.	(2005)
109,000 M.T.	(2010)

2) Sugar

Total import volumes of sugar are estimated by the difference between consumption and production in Sri Lanka. Table A.6.8 shows some statistics of the sugar sector from 1989 to 1998.

a) Future Production in Sri Lanka

Sri Lanka's sugar production is sufficient to meet only about 10-12 % of the domestic consumption requirement. Due to the availability of large stocks of sugar imported in 1997, sugar imports in 1998 declined by about 19 %. World sugar prices declined by about 14 % during this period. The situation has been further aggravated by the sharp decline in international prices which led to an erosion of the financial viability of the industry. The faster depreciation of the rupee in 1998, and the government taxes on sugar imports precluded the fall of sugar prices, in spite of a large decline in international prices.

It is predicted that the production rate of sugar in the future will compare to that in 1997 and 1998 due to the following reasons:

- Increase in the rate of production is subject to the financial viability of the industry;
- Domestic prices of sugar are subject to international prices, which have been more competitive in recent years, unless the government's tariff measures deter competition.

In estimating future production of sugar in Sri Lanka, an annual production rate of 63,000 M.T. is assumed, based on the average production rate from 1997 to 1998. The result is as follows:

63,000 M.T.	(2005)
63,000 M.T.	(2010)

b) Future Consumption in Sri Lanka

The annual per capita consumption of sugar in Sri Lanka has gradually increased from 20.6 kg in 1989 to 26.9 kg in 1998 as shown in A.6.8. Future consumption of sugar in Sri Lanka is calculated on the assumption that the per capita consumption in Sri Lanka will increase by 3% per annum up to 35 kg/year and remain stable after that.

667,000 M.T.	(2005)
736,000 M.T.	(2010)

c) Estimation of Import Volumes

The total import volumes of sugar are estimated by the difference between consumption and production in Sri Lanka.

604,000 M.T.	(2005)
673,000 M.T.	(2010)

d) Volumes Handled at Galle Port

Since there is no production of sugar in the Southern Province, all sugar consumed in the Province is imported. The import volumes at Galle Port are calculated by multiplying the national consumption by the ratio of the population of the Southern Province to the national population. Projected import volumes at Galle Port are as follows:

87,000 M.T.	(2005)
96,000 M.T.	(2010)

3) Fertilizer

All fertilizer consumed in Sri Lanka is assumed to be imported.

a) Future Consumption in Sri Lanka

Fertilizer issues for rice, tea, rubber, coconuts and other crops are shown in Table A.6.9. As these issues have changed irregularly except that of tea, they do not correlate with any socioeconomic indices. Therefore, future consumption of fertilizer is estimated using the average issues of fertilizer from 1994 to 1998 for rice, rubber, coconuts and other crops.

Future consumption of fertilizer for tea is calculated based on the assumption that quantity consumed will correlate with the time series.

$$Y = 12.107 X - 24,015 \quad (r = 0.938)$$

Where, X: Time series

Y: Fertilizer issues for tea ('000 M.T.)

The summary of future consumption of fertilizer is shown in Table 6.3.1.

Table 6.3.1 Future Consumption of Fertilizer in Sri Lanka

(Unit: '000 M.T.)

Year	Paddy	Tea	Rubber	Coconuts	Others	Total
2005	251	260	15	35	98	659
2010	251	320	15	35	98	719

The import volumes of fertilizer will be the same as the consumption in Sri Lanka, as mentioned above.

b) Volumes Handled at Galle Port

Statistics of fertilizer issues in the Southern Province are available only for 1986 and 1987 as shown in "The Study on the Development of the Port of Galle in the Democratic Socialist Republic of Sri Lanka 1991" by JICA. They show that the ratios of fertilizer issues in the Southern Province to those in Sri Lanka were 15.0% and 16.5%, respectively. The ratio of 18.0% is adopted in consideration of the future development of the Southern Province.

The import volumes at Galle Port will be the same as the consumption in the Southern Province. The projected import volumes at Galle Port are as follows:

119,000 M.T. (2005)

129,000 M.T. (2010)

All fertilizer handled at Galle Port will be in bulk or bag.

4) Cement

a) Future Import Volumes in Sri Lanka

Table A.6.10 shows import volumes of cement/clinker as per Port Statistics for the period 1990 to

1999. Projected cement import volumes are calculated on the assumption that this volume will correlate with GDP in Sri Lanka.

$$Y = 0.0081 X - 2,171.4 \quad (r = 0.963)$$

Where, X: GDP in Sri Lanka (Rs. Million)
Y: Import Volumes of Cement ('000 M.T.)

Accordingly, future import volumes are as follows.

3,748,000 M.T.	(2005)
6,209,000 M.T.	(2010)

b) Future Consumption in the Southern Province

Future consumption of cement in the Southern Province is calculated based on the assumption that quantity consumed will correlate with the GDP in the Southern Province, which is shown in Table 6.1.11.

$$Y = 0.0159 X - 428.69 \quad (r = 0.930)$$

Where, X: GDP in the Southern Province (Rs. Million)
Y: Consumption of Cement ('000 M.T.)

Accordingly, future consumption of cement in the Southern Province is as follows:

770,000 M.T.	(2005)
1,321,000 M.T.	(2010)

c) Volumes Handled at Galle Port

There are private cement factories (Ruhunu Cement and Galle Cement) in the Galle District. The factories currently have the capacity of approx.700,000 tons (500,000tons for bulk cement and 200,000tons for bagged cement). And it is envisaged that new cement factories by another company will be constructed in July 2000 for bagged cement and in 2002 for bulk cement. These factories will have a production capacity of 500,000tons for bulk cement and 300,000tons for bagged cement. The estimation of future production of cement in the Southern Province is based on the assumption that the local factories will produce cement at their full capacity and with modernization of their facilities in 2010 in order to meet the market demand. Therefore, cement demand from other provinces adjacent to the Southern Province will be considered in addition to the consumption in the Southern Province.

The difference in volumes between cement production and consumption and the requirement of clinker and gypsum for the cement factories will be handled at Galle Port. The figures are as follows:

Cement	Clinker	Gypsum	
500,000 M.T.	475,000 M.T.	25,000 M.T.	(2005)
700,000 M.T.	950,000 M.T.	50,000 M.T.	(2010)

Cement except cement bags and gypsum handled at Galle Port will be in bulk.

5) Iron / Steel

Sri Lanka has no domestic production of iron/steel, and all iron/steel consumed in the country has been imported.

a) Future consumption in Sri Lanka

Future consumption of iron/steel does not correlate with GDP in Sri Lanka. Therefore, the future consumption of iron/steel is calculated using an elastic value which is calculated based on the difference between the rate of the import volumes and the GDP of manufacturing industries in Sri Lanka from 1995 to 1999. The import volumes of iron/steel and future GDP of manufacturing industries in Sri Lanka from 1995 to 1999 are shown in Table A.6.11 and Table 6.1.9. The projected consumption volumes in Sri Lanka are as follows:

362,000 M.T.	(2005)
596,000 M.T.	(2010)

Consumption figures are directly tied to import volume.

d) Future Consumption in the Southern Province

Future consumption of iron/steel in the Southern Province is calculated by multiplying the national consumption by the ratio of GDP of the Southern Province to the national GDP, as follows.

36,000 M.T.	(2005)
61,000 M.T.	(2010)

c) Volumes handled at Galle Port

Consumption figures are directly tied to import volumes, and future import volumes for iron/steel are as follows.

36,000 M.T.	(2005)
61,000 M.T.	(2010)

6) M/Vehicle

Sri Lanka has no domestic production of M/vehicle; and all vehicles in the country have been imported.

a) Future demand in Sri Lanka

Future demand of M/vehicle does not correlate with GDP in Sri Lanka. Therefore, the future demand of M/vehicle is calculated using an elastic value which is calculated based on the difference between the rate of the import volumes and the GDP in Sri Lanka from 1995 to 1999.

The import volumes of M/vehicle and future GDP in Sri Lanka from 1995 to 1999 are shown in Table A.6.11 and Table 6.1.9. The projected volumes in Sri Lanka are as follows:

104,000 M.T.	(2005)
148,000 M.T.	(2010)

Demand figures are directly tied to import volumes.

b) Volumes handled at Galle Port

Import of M/vehicle at Galle Port will not be considered because the possibility of PCC(Pure Car Carrier) calling at the Port is remote.

7) Maize

a) Estimation of Import Volumes in Sri Lanka

The production rate of maize has been slightly decreasing in the last decade, while consumption has been increasing. This may account for the fact that production costs in Sri Lanka are not competitive compared with that of neighboring countries like India, Pakistan etc.

The projected import volumes are calculated based on the assumption that production rate will be unchanged at the rate of 10% to consumption in Sri Lanka and future consumption in Sri Lanka will correlate with the number of livestock in Sri Lanka, which is shown in Table A.6.12.

$$Y = 0.0816 X - 654.54 \quad (r = 0.913)$$

Where, X : Number of livestock in Sri Lanka ('000 No.)

Y : Projected Consumption Volumes ('000 M.T.)

Accordingly, future consumption volumes of maize in Sri Lanka are as follows:

227,000 M.T.	(2005)
285,000 M.T.	(2010)

The total import volumes of maize are estimated by the difference between consumption and production in Sri Lanka.

204,000 M.T.	(2005)
257,000 M.T.	(2010)

b) Volumes Handled at Galle Port

Future consumption of maize in the Southern Province is calculated by multiplying the national consumption by the ratio of population of the Southern Province to the national population. Consumption figures are directly tied to import volumes, and future import volumes for maize are as follows:

27,000 M.T.	(2005)
33,000 M.T.	(2010)

(2) Containerizable Cargoes

Containerizable cargoes comprise rice, pulses, potatoes, onions, dry fish etc.

1) Import Volumes of Containerizable Cargoes in Sri Lanka

The projected import volumes of containerizable cargoes in Sri Lanka are calculated based on the assumption that future import volume will correlate with GDP in Sri Lanka, which is shown in Table 6.1.8.

$$Y = 0.0087 X - 1,183.4 \quad (r = 0.970)$$

Where, X : GDP in Sri Lanka (Rs. Million)
Y : Projected Import Volume ('000 M.T.)

Accordingly, future import volumes of containerizable cargoes in Sri Lanka are as follows:

5,175,000 M.T.	(2005)
7,818,000 M.T.	(2010)

2) Paddy (Rice)

Table A.6.13 shows some statistics relating to paddy sector from 1988 to 1998.

a) Future Production in Sri Lanka

According to the "Six Year Development Programme 1999-2004 Macro Framework & Sector Review Nov. 1998" by the Department of National Planning, Ministry of Finance & Planning in Sri Lanka, paddy production which suffered a severe setback during the cultivation year 1996 recovered in 1998 due to the increase in the harvested area, increased use of fertilizer application arising from the enhanced subsidy provided for Urea and favorable weather conditions. Based on the above, it is assumed that the future production of rice in 2005 and 2010 will maintain the production rate in 1998, which is assessed as a nearly peaked output for paddy.

1,615,000 M.T.	(2005)
1,615,000 M.T.	(2010)

b) Future Consumption in Sri Lanka

Domestic consumption of rice was stable from 1988 to 1997. The average annual consumption per capita of rice in Sri Lanka was 103.3 kg from 1980 to 1987, 95.3 kg from 1988 to 1997 and stable between 90 – 95 kg for last 5 years according to the Food Balance Sheet by the Department of Census & Statistics. In addition, consumption has had a tendency to decrease over the past 20 years. Therefore, future consumption per capita of rice in Sri Lanka is calculated based on the assumption that per capita consumption will remain at 95 kg per capita in the future.

1,913,000 M.T.	(2005)
1,997,000 M.T.	(2010)

c) Estimation of Import Volumes in Sri Lanka

Rice is considered as a containerizable cargo according to the past record of the cargoes handled at Colombo Port. Therefore, import volumes of rice are calculated based on the assumption that the volumes of rice are included in that of the containerizable cargoes, which correlate with GDP in Sri Lanka.

d) Future production in the Southern Province

According to Table A.6.14, the average proportion of paddy production in the Southern Province to that in Sri Lanka was 11.4 % from 1984 to 1994 and remained stable during the same period. Future production of paddy in the Southern Province is calculated on the assumption that the production ratio in the Southern Province will be similar to the above in the future.

184,000 M.T.	(2005)
184,000 M.T.	(2010)

e) Future consumption in the Southern Province

Future consumption in the Southern Province is based on the same assumption as for Sri Lanka, which is that per capita consumption will remain at 95 kg per capita in the future.

249,000 M.T.	(2005)
260,000 M.T.	(2010)

f) Volumes Handled at Galle Port

The volumes of rice to be handled at Galle Port are estimated by the difference between consumption and production in the Southern Province. In addition, short sea-routes ratio, which refers to non-mainline container vessels which might call at Galle Port, is also considered. The short sea-routes are on line between Middle East and South-East Asia and have been obtained by analyzing origin and destination of container cargoes in 1999. In case of rice, the short sea-routes ratio is 100%.

65,000 M.T.	(2005)
76,000 M.T.	(2010)

3) Other crops

The other crops comprise pulses, potatoes, onions, dry fish etc.

a) Estimation of Import Volumes in Sri Lanka

Import volumes of other crops are calculated based on the assumption that volumes of other crops are included in that of the containerizable cargoes and containerizable cargoes will correlate with GDP in Sri Lanka.

b) Future production and consumption in the Southern Province

Production and consumption volumes for other crops in Sri Lanka are shown in Table A.6.15.

Following points are highlighted regarding production and consumption trends of these crops in Sri Lanka:

- The production rate of these crops has been steady or rather decreasing from 1988 to 1997, while per capita consumption has been rapidly increasing in the same period;
- Import volumes of these crops, especially potatoes and onions, from 1988 to 1997 have increased sharply.

Various reasons are taken into account for the above situation, such as that :

- Production costs of these crops in Sri Lanka are not competitive compared with those of neighboring countries like India, Pakistan etc;
- The import of potatoes, chillies, onions and major high value crops has continued to be liberalized since Issue of Non Tariff Barrier in 1996.

Future consumption and production in Sri Lanka are calculated based on the assumption that production rate will be unchanged at the average rate from 1988 to 1997 and the growth rate of per capita consumption will be 2% up to 2005 and 1% after 2006 for pulses, 5% up to 2005 and 2.5% after 2006 for potatoes and dry fish, and 7% up to 2005 and 3.5% after 2006 for onions, based on the growth rate from 1988 to 1997.

Table 6.3.2 Future Consumption Volumes for Other Crops in Sri Lanka
(Unit: '000 M.T.)

	2005	2010
Pulses	134	147
Potatoes	167	197
Onions	187	232
Dry Fish	103	121

Table 6.3.3 Future Production Volumes for Other Crops in Sri Lanka
(Unit: '000 M.T.)

	2005	2010
Pulses	41	41
Potatoes	81	81
Onions	71	71
Dry Fish	12	12

The future consumption volumes and the production volume in the Southern Province are calculated by multiplying those in Sri Lanka by the ratio of the population of the Southern Province to the national population for other crops.

Table 6.3.4 Future Consumption Volumes for Other Crops in the Southern Province
(Unit: '000 M.T.)

	2005	2010
Pulses	17	19
Potatoes	22	26
Onions	24	30
Dry Fish	13	16

Table 6.3.5 Future Production Volumes for Other Crops in the Southern Province
(Unit: '000 M.T.)

	2005	2010
Pulses	5	5
Potatoes	11	11
Onions	9	9
Dry Fish	2	2

c) Volumes Handled at Galle Port

The difference between the future consumption and the future production in the Southern Province will be the total volume handled at Galle Port. In addition, the short sea-routes ratio is considered. Projected import volumes at Galle Port are as follows:

Table 6.3.6 Future Import Volumes for Other Crops in the Southern Province
(Unit: '000 M.T.)

	Short sea-routes ratio	2005	2010
Pulses	32.06 %	4	4
Potatoes	96.39 %	11	14
Onions	79.94 %	12	17
Dry Fish	72.41 %	8	10

4) Other cargoes

Other cargoes comprise other foodstuffs, metal, construction materials, textiles etc.

a) Volumes Handled at Galle Port

Future import volumes for other cargoes in Sri Lanka are estimated based on the assumption that it will increase in line with GDP growth rate in Sri Lanka. Future import volumes in the Southern Province are calculated by multiplying the import volume in Sri Lanka by the ratio of GDP of the Southern Province to the national GDP. The short sea-routes ratio is 50%. Accordingly, projected import volumes at Galle Port are as follows:

58,000 M.T. (2005)
84,000 M.T. (2010)

6.3.2 Export Cargoes

(1) Container Cargoes

1) Tea

a) Future Export Volumes in Sri Lanka

The future export volumes of tea are estimated using an elastic value which is calculated based on the difference between the rate of the export volumes and the GDP of countries to which tea was exported from Sri Lanka from 1988 to 1997. The future GDP of these countries are shown in Table A.6.16. The projected export volumes in Sri Lanka are as follows:

683,000 M.T.	(2005)
788,000 M.T.	(2010)

b) Volumes Handled at Galle Port

Cultivation of low grown tea is prosperous in the Southern Province, in particular Galle and Matara districts. The average Southern Province's share to the total area in Sri Lanka under tea cultivation from 1993 to 1995 was 21.9% according to "Statistical Abstract 1997" by the Department of Census and Statistics. The future production of tea in the Southern Province is estimated on the assumption that the province's share to the total area in Sri Lanka under tea cultivation will remain unchanged in the future.

The export volumes at Galle Port are considered the same as the future production volumes in the Southern Province. In addition, short sea-routes ratio, which refers to non-mainline container vessels which might call at Galle port, is also considered. In case of tea, the short sea-routes ratio is 39.1%.

The projected export volumes of tea at the Port of Galle are as follows:

58,000 M.T.	(2005)
67,000 M.T.	(2010)

2) Rubber

a) Future Export Volumes in Sri Lanka

The future export volumes of rubber are calculated on the assumption that it will increase in line with the GDP growth rate of countries to which this commodity is exported from Sri Lanka. The GDP growth rate in each country is shown in Table A.6.16. Projected export volumes of rubber in Sri Lanka are as follows:

218,000 M.T.	(2005)
248,000 M.T.	(2010)

b) Volumes Handled at Galle Port

Future production of rubber in the Southern Province is calculated based on the assumption that the province's share of the total rubber production in Sri Lanka in 1999, which is the average value for the last 4 years (12.8%) as shown in Table A.6.17, will remain unchanged after 2000. The short sea-routes ratio is 23%. Accordingly, the projected export volumes at Galle Port are as follows:

6,000 M.T.	(2005)
7,000 M.T.	(2010)

3) Coconuts & Coconut Products

a) Future Export Volumes in Sri Lanka

The future export volumes of coconuts & coconut products are estimated using an elastic value which is calculated based on the difference between the rate of the export volumes and the GDP of countries to which these commodities are exported from Sri Lanka in the period 1988 to 1997. The future GDP of these countries are shown in Table A.6.16. Accordingly, the projected export volumes from Sri Lanka are as follows:

363,000 M.T.	(2005)
418,000 M.T.	(2010)

b) Volumes Handled at Galle Port

The province's share of the total area in Sri Lanka under coconut cultivation was 11.8% in 1993 according to "Agricultural Statistics of Sri Lanka 1997". As there is no available data concerning production in the Province, future production of coconuts in the Province is calculated using the above share. In addition, short sea-routes ratio, which refers to non-mainline container vessels which might call at Galle Port, is also considered. In case of coconuts & coconut products, the short sea-routes ratio is 36.3%.

Accordingly, the projected export volumes of coconuts & coconut products at Galle Port are as follows:

16,000 M.T.	(2005)
18,000 M.T.	(2010)

4) Garments

a) Future Export Volumes in Sri Lanka

The future export volumes of garments are calculated on the assumption that it will increase in line with the GDP growth rate of countries to which garments are exported from Sri Lanka. The GDP growth rate in each country is shown in Table A.3.16. Accordingly, projected export volumes of garments in Sri Lanka are as follows:

339,000 M.T.	(2005)
382,000 M.T.	(2010)

b) Volumes Handled at Galle Port

Future production volumes of garments in the Southern Province are calculated based on the assumption that the production share in the Southern Province will be the same as that of employee numbers in the Province as shown in Table A.6.18.

The export figures are tied to the production volume. The short sea-routes ratio is 16.5%. Accordingly, projected export volumes at Galle Port are as follows:

6,000 M.T.	(2005)
7,000 M.T.	(2010)

4) Other Cargoes

The other export cargoes are comprised of other light industrial products, metal, minerals, ceramics, other foodstuffs etc.

a) Future Export Volumes in Sri Lanka

The future export volumes of other cargoes are calculated on the assumption that it will increase in line with the GDP growth rate of countries to which they are exported from Sri Lanka. The GDP growth rate in each country is shown in Table A.6.16. Accordingly, projected export volumes of other cargoes from Sri Lanka are as follows:

643,000 M.T.	(2005)
736,000 M.T.	(2010)

b) Volumes Handled at Galle Port

The production of other light industrial products, minerals and ceramics is considered in the Southern Province. Future production volumes of other cargoes in the Southern Province are calculated based on the assumption that the production share in the Southern Province will be the same as that of employee numbers in the Province as shown in Table A.6.18.

The export figures are tied to the production volume. The short sea-routes ratio is 30%. Accordingly, projected export volumes at Galle Port are as follows:

7,000 M.T.	(2005)
9,000 M.T.	(2010)

(2) Container Cargo Volumes to be adopted for Export

According to the Port Statistics by SLPA, the growth rate of the export cargoes from 1990 to 1999 was 5.6 %, while the growth rate of the future export cargoes from 1999 to 2005 is 2.4% as estimated in this Section. Therefore, the Study Team will recommend adoption of a growth rate of 5.6% which tallies with that of past records concerning the forecast of export cargoes from Sri Lanka.

Container cargo volumes to be adopted for export are as follows:

Table 6.3.7 Container Cargo Volumes for Export in Sri Lanka

(Unit: '000 M.T.)

	2005	2010
Tea	808	1,076
Rubber	258	339
Coconuts & Product	429	571
Garment	401	522
Others	761	1,005
Total	2,657	3,513

Table 6.3.8 Container Cargo Volumes for Export at Galle Port

(Unit: '000 M.T.)

	2005	2010
Tea	69	92
Rubber	8	10
Coconuts & Product	18	24
Garment	8	10
Others	9	12
Total	112	148

6.3.3 Container Cargo Volumes

The volumes of container cargoes and the number of containers are forecasted using the following procedure:

- Selection of containerizable cargoes
- Estimation of the ratio of container cargoes to containerizable cargoes
- Estimation of the volumes of container cargoes and the number of containers

(1) Containerizable Cargoes in Sri Lanka

Containerizable import cargoes in Sri Lanka are composed of rice, pulses, potatoes, onions, dry fish and other break bulk cargoes. All export cargoes except liquid bulk cargoes are considered containerizable cargoes. The volumes of containerizable cargoes are calculated as the sum of these commodities.

Tables A.6.19 and A.6.20 show the volumes of containerizable import/export cargoes from 1990 to 1999 and in the future.

(2) Ratio of Containerization in Sri Lanka

The ratio of container cargo volumes to containerizable cargo volumes in future is calculated using a logistic curve based on the data in Tables A.6.19 and A.6.20.

1) For Import Cargoes

The maximum limit of the ratio of containerization for import cargoes is assumed to be 100% after estimating the containerized ratio of each commodity.

The ratio of containerization during the planning period is calculated using the following equation:

$$Y = \frac{100}{1 + e(476.136 - 0.2393X)}$$

where, X : Year

Y : Ratio of containerization (%)

2) For Export Cargoes

The maximum limit of the ratio of containerization for export cargoes is assumed to be 100% after estimating the containerized ratio of each commodity.

The ratio of containerization during the planning period is calculated using the following equation:

$$Y = \frac{100}{1 + e(494.040 - 0.2486X)}$$

where, X : Year

Y : Ratio of containerization (%)

3) Summary

Table 6.3.9 shows the past trend of the ratio of containerization from 1990 to 1999 and the result of the calculation in future.

Table 6.3.9 Ratio of Containerization

		Import(%)	Export(%)
Past Trend	1990	58.99	68.75
	1991	60.66	69.02
	1992	60.40	78.63
	1993	65.11	83.55
	1994	67.63	82.82
	1995	85.12	90.15
	1996	80.46	89.25
	1997	87.63	96.06
	1998	88.02	93.17
	1999	90.96	93.42
Estimate	2005	97.49	98.79
	2010	99.23	99.65

(3) Container Cargo Volumes and Number of Containers in Sri Lanka

The container cargo volumes for import and export are calculated by multiplying the containerizable cargo volumes shown in (1) by the ratio of containerization estimated in (2).

Further the cargo volumes in TEU are estimated by dividing the above container cargo volumes by 13.4 tons per TEU for import and 12.0 tons for export. However, these figures do not reflect the effect of empty containers. The total volumes of TEU are obtained by calculating TEU of empty containers; the ratio here is assumed to be 16% for import and export containers based on Port Statistics in 1999.

Table 6.3.10 shows the container cargo volumes and the number of containers for import and export in Sri Lanka up to year 2010.

Table 6.3.10 Container Cargo Volumes and Number of Containers for Import and Export in Sri Lanka

Year	Import ('000 M.T.)	Export ('000 M.T.)	Import ('000 TEU)	Export ('000 TEU)
2005	5,045	2,657	448	448
2010	7,758	3,513	689	689

(4) Containers Handled at Galle Port

The container cargo volumes handled at Galle Port are calculated on the following assumption:

- Sugar, fertilizer, bulky cement, bagged cement, clinker, iron/steel and maize for import are non-containerizable cargoes;
- All export cargoes are containerizable cargoes.

The results are shown in Table 6.3.11.

Table 6.3.11 Container cargo volumes and Number of Containers handled at the Port of Galle

Year	Import ('000 M.T.)	Export ('000 M.T.)	Import ('000 TEU)	Export ('000 TEU)
2005	158	112	14	14
2010	205	148	18	18

6.3.4 Cargo volumes handled at Galle Port

The cargo volumes, handled at Galle Port, by commodity are shown in Table 6.3.12. The cargo volumes by handling mode are shown in Table 6.3.13.

Table 6.3.12 Cargo Volumes at Galle Port by Commodity

(Unit: '000 M.T.)

	2005	2010
(Import)		
1.Non Containerizable		
- Sugar	87	96
- Fertilizer	119	129
- Cement	500	700
- Clinker	475	950
- Gypsum	25	50
- Iron/Steel	36	61
- Maize	27	33
Subtotal	1,269	2,019
2.Containerizable		
- Break Bulk Cargo	0	0
- Container Cargo	158	205
Subtotal	158	205
Import Total	1,427	2,224
(Export)		
1.Containerizable		
- Break Bulk cargo	1	1
- Container Cargo	112	148
Export Total	113	149
(Coastal Service)		
- Flour	105	109
- Petroleum Product	20	20
Coastal Service Total	125	129
Grand Total	1,665	2,502

Table 6.3.13 Cargo Volumes at Galle Port by Handling Mode

	2005	2010
(Import)		
Non Containerizable ('000 M.T.)	1,394	2,148
Containerizable		
Break Bulk ('000 M.T.)	0	0
Container ('000 M.T.)	158	205
Laden ('000 TEU)	11.8	15.3
Empty ('000 TEU)	2.3	2.9
Total ('000 TEU)	14.0	18.2
(Export)		
Containerizable		
Break Bulk ('000 M.T.)	1	1
Container ('000 M.T.)	112	148
Laden ('000 TEU)	9.3	12.3
Empty ('000 TEU)	4.7	5.9
Total ('000 TEU)	14.0	18.2
(Total)		
Non Containerizable ('000 M.T.)	1,394	2,148
Containerizable		
Break Bulk ('000 M.T.)	1	1
Container ('000 M.T.)	270	353
Laden ('000 TEU)	21.1	27.6
Empty ('000 TEU)	7.0	8.8
Total ('000 TEU)	28.0	36.4

6.3.5 Summary

Graphical charts and a summary table of the import/export cargo volumes including Port Statistics in the last decade are shown in Table 6.3.14, Figure 6.3.1 and 6.3.2 respectively.

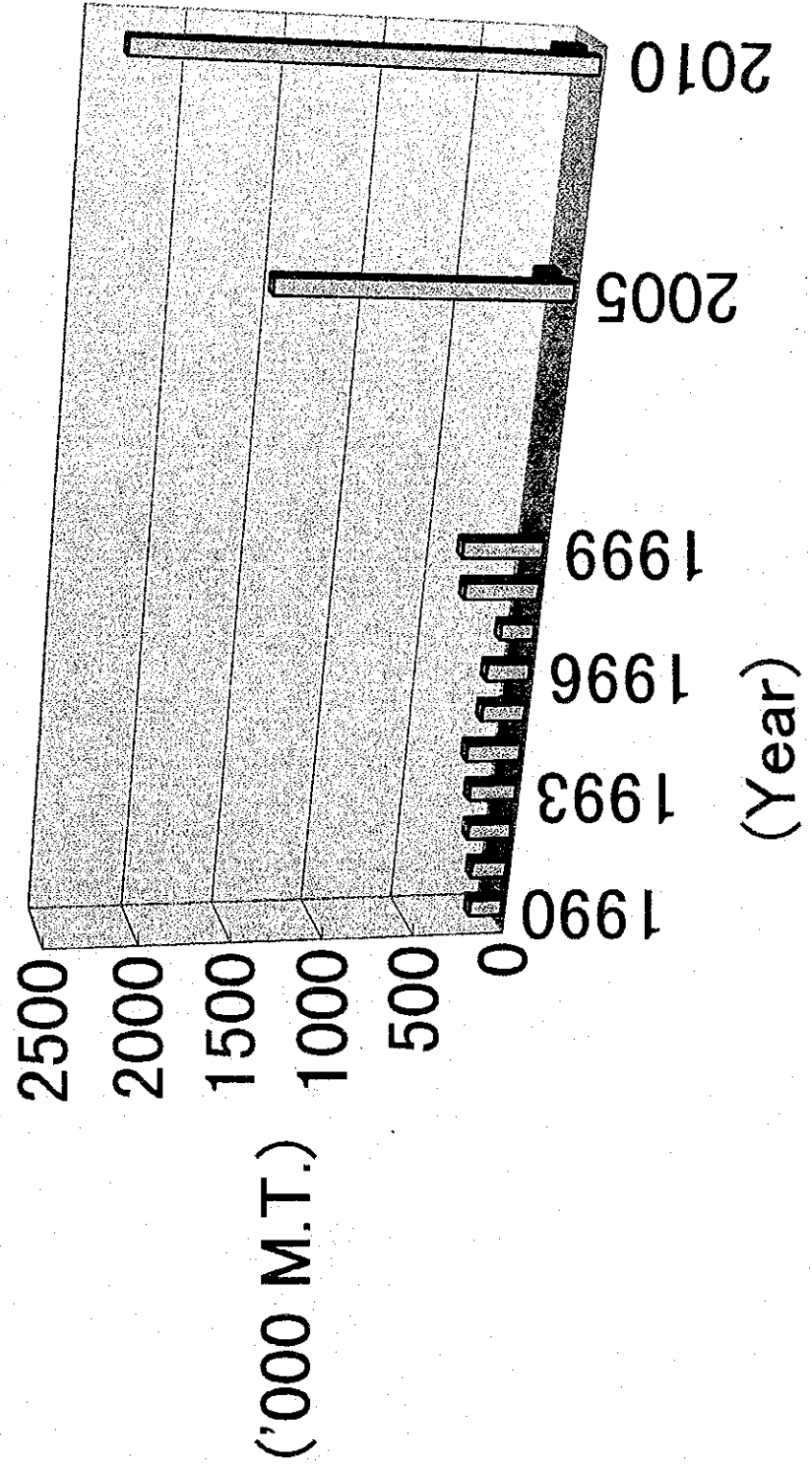
Table 6.3.14 Port Cargo Handling in Sri Lanka and at the Port of Galle

	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Growth Rate %	2005	Growth Rate %	2010
1. Socioeconomic Index															
(1) Population															
- Sri Lanka	Thousand	16,993	17,247	17,405	17,619	17,865	18,136	18,315	18,552	18,774		(1990-1996)	20,151	(1998-2005)	21,028
- Southern Province	Thousand	2,207	2,239	2,268	2,299	2,330	2,374	2,388	2,415	2,440		1.23	2,618	1.01	2,733
(2) GDP Growth Rate															
- Sri Lanka	(%)	6.2	4.8	4.4	6.9	5.6	5.5	3.8	6.4	4.7		5.28		6.2	
- Southern Province	(%)		12.7	2.4	7.8	2.9	4.8	3.4	6.4			5.73		6.7	
2. Cargo Volume															
(1) Sri Lanka															
1) Import															
(Non Containerizable Cargo)															
-Wheat	000 M.T.	684	698	707	810	864	1,090	880	779	892	861		1,240		1,294
-Sugar	000 M.T.	287	388	372	382	343	431	385	547	333	472		604		673
-Fertilizer	000 M.T.	497	428	338	478	444	523	472	395	480	526		659		719
-Cement/Clinker	000 M.T.	425	362	558	938	1,131	1,398	1,315	1,398	1,676	1,998		3,748		6,209
-Gypsum	000 M.T.	0	0	9	27	40	44	34	34	53	26		67		111
-Iron/Steel	000 M.T.	0	0	0	0	0	167	216	204	251	225		362		596
-M/Vehicle	000 M.T.	0	0	0	0	0	54	43	54	77	71		104		148
-Maize	000 M.T.	0	0	0	0	0	62	77	72	107	106		204		256
-Others	000 M.T.	262	425	349	127	103	18	6	0	5	23		25		25
Subtotal	000 M.T.	2,155	2,300	2,333	2,782	2,925	3,787	3,437	3,483	3,874	4,308	8.0	7,013	8.5	10,031
(Containerizable cargo)															
-Break Bulk Cargo	000 M.T.	649	631	771	750	779	323	490	346	382	285		130		60
-Container Cargo	000 M.T.	933	973	1,176	1,400	1,628	1,847	2,018	2,450	2,806	2,866		5,045		7,758
Subtotal	000 M.T.	1,582	1,604	1,947	2,150	2,407	2,170	2,508	2,796	3,188	3,151	8.0	5,175	8.6	7,818
-No. of Container	TEU	87,917	95,197	107,033	127,405	146,636	165,158	179,632	209,973	237,570	256,776		448,200		689,240
Laden	TEU	66,927	71,434	83,851	102,048	122,048	137,550	145,856	177,008	202,757	214,612		376,490		578,960
Empty	TEU	20,990	23,763	23,182	24,588	27,608	33,776	32,965	34,813	42,164	42,164		71,710		110,280
Import Total	000 M.T.	3,738	3,903	4,280	4,932	5,332	5,957	5,945	6,279	7,062	7,459	8.0	12,188	8.5	17,849
2) Export															
(Containerizable Cargo)															
-Break Bulk Cargo	000 M.T.	374	380	242	203	248	149	173	69	125	128		33		12
-Container Cargo	000 M.T.	821	844	887	1,031	1,193	1,363	1,436	1,681	1,706	1,816		2,657		3,513
Export Total	000 M.T.	1,195	1,223	1,128	1,234	1,441	1,512	1,609	1,750	1,831	1,944	5.6	2,690	5.6	3,525
-No. of Container	TEU	85,122	92,986	104,898	124,494	142,839	163,096	170,168	206,824	241,128	254,842		448,200		689,240
Laden	TEU	66,545	72,090	76,842	102,871	118,354	121,523	140,969	143,300	151,920	151,920		221,420		292,750
Empty	TEU	18,577	20,896	28,056	39,968	44,742	48,645	65,915	97,828	102,922	102,922		226,780		396,490
Sri Lanka Total	000 M.T.	4,932	5,127	5,408	6,166	6,773	7,469	7,554	8,029	8,893	9,403	7.4	14,878	7.9	21,374
(Excluding Coastal Service, Export of Wheat Bran & Liquid Bulk Cargo)															
(2) Galle Port															
1) Import															
(Non Containerizable Cargo)															
-Sugar	000 M.T.	0	0	0	0	0	0	0	0	0	0		87		96
-Fertilizer	000 M.T.	0	0	0	0	0	0	0	0	0	0		119		129
-Cement	000 M.T.	0	0	0	0	9	4	0	0	0	0		500		700
-Clinker	000 M.T.	0	0	148	175	196	168	177	101	280	174		475		950
-Gypsum	000 M.T.	0	0	9	6	15	12	4	4	11	9		25		50
-Iron/Steel	000 M.T.	0	0	0	0	0	0	0	0	0	0		36		61
-Maize	000 M.T.	0	0	0	0	0	0	0	0	0	0		27		33
-Others	000 M.T.	131	158	0	0	0	0	0	0	0	0		0		0
Subtotal	000 M.T.	131	158	157	181	226	184	181	133	343	389		1,269		2,019
(Containerizable cargo)															
-Break Bulk Cargo	000 M.T.	3	3	8	10	20	4	4	1	0	3		0		0
-Container Cargo	000 M.T.	0	0	0	0	0	0	0	0	0	0		158		205
Subtotal	000 M.T.	3	3	8	10	20	4	4	1	0	3		158		205
-No. of Container	TEU	0	0	0	0	0	0	0	0	0	0		14,040		18,210
Laden	TEU	0	0	0	0	0	0	0	0	0	0		11,790		15,300
Empty	TEU	0	0	0	0	0	0	0	0	0	0		2,250		2,910
Import Total	000 M.T.	134	161	165	191	246	188	185	134	343	392		1,427		2,224
2) Export															
(Containerizable Cargo)															
-Break Bulk Cargo	000 M.T.	1	0	0	0	7	2	2	1	0	1		1		1
-Container Cargo	000 M.T.	0	0	0	0	0	0	0	0	0	0		112		148
Export Total	000 M.T.	1	0	0	0	7	2	2	1	0	1		113		149
-No. of Container	TEU	0	0	0	0	0	0	0	0	0	0		14,040		18,210
Laden	TEU	0	0	0	0	0	0	0	0	0	0		9,330		12,330
Empty	TEU	0	0	0	0	0	0	0	0	0	0		4,710		5,880
3) Coastal Service															
-Flour	000 M.T.	43	33	37	47	41	47	48	42	39	34		105		109
-Petroleum Product	000 M.T.	0	0	35	17	7	1	1	5	20	13		20		20
Coastal S. Total	000 M.T.	43	33	72	64	48	48	49	47	59	47		125		129
Galle Port Total	000 M.T.	178	194	237	255	301	238	236	182	402	440		1,655		2,502

Import/Export Cargo Volumes in Galle Port

Figure 6.3.1

■ Import ■ Export



Import/Export Cargo Volumes in Sri Lanka

Figure 6.3.2



Chapter 7 Development Policy of Galle Port

7.1 Development Principle

Principle 1

To meet the demand of cargo traffic by providing an optimum transportation service in the Southern Area in a manner beneficial to the whole nation

As a commercial port in the Southern Area, Galle Port is expected to provide high quality services to meet the present and future demand for cargo traffic which is growing due to the economic and social development of the Southern Area. Due to limited permissible vessel draught, the narrow turning basin and shortage of berths and yard space at Galle Port, it is evident that the present Galle Port is not providing satisfactory services for port users to fulfill the above expectations. The purpose of the Galle Port Development is to meet the present and projected requirements of the Port and consequently to contribute to the regional and the national economy. The potential cargoes to be handled at the new Galle Port are bulky and/or long cargoes such as cement fertilizer and steel products unsuitable for container transport. And local containers from/to the Southern Area which support the regional economy should be included in the potential cargoes.

Principle 2

To function as a catalyst to energize the economic and social development of the Southern Area

To stimulate the economic and social development of the Southern Area, in accordance with the national policy of the Sri Lankan Government, Galle Port could be developed as a front runner. For industrial development, urban development and enhancement of living standards, the Port is expected to function as a catalyst by providing a rational transportation gateway for materials, crops, manufactured goods and consumer goods.

For Galle Port to fulfill this task meaningfully, the promotion of Galle Port and adaptation of appropriate measures to enhance the utilization of the Port are indispensable.

7.2 Purposes of the Development

- (1) Enhancing the potential of a bulk cargo distribution base for items such as cement and clinker, fuel, and flour, accommodating large bulk carriers and exploiting its geographical advantage.
- (2) Supporting the regional agriculture by providing necessary facilities for import of fertilizer and export of crops.
- (3) Supporting the EPZ and industrial estates by providing necessary facilities for import of materials and export of manufactured goods.

- (4) Providing necessary facilities for the transportation of food and consumer goods in the hinterland of the Port.
- (5) Providing necessary facilities for working crafts such as tugboats, barges and ship chandler's crafts and industries directly related to the Port.
- (6) Supporting other activities conducted within the Bay area
 - 1) Maintaining the condition of the present fishery port facilities, to ensure their full utilization
 - 2) Securing some spaces for yacht anchoring now being conducted within the basin
- (7) Securing safe navigation in the harbour taking into consideration natural conditions
- (8) Connecting the Port to land transportation facilities while avoiding traffic congestion
- (9) Consideration of environmental and archeological conservation
- (10) Providing employment opportunities for persons in the Southern Area in direct port services as well as numerous ancillary services