PORT LOUIS HARBOUR AND ITS ECONOMIC LINKAGES TO THE MAURITIAN ECONOMY

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Chapter I

1.0 Introduction

Situated half-way between Africa and India, at about 1000km from the Eastern coast of Madagascar, lies the Republic of Mauritius, a 1865 square km island of volcanic origin. The island is graced by some 330km of sandy beaches and protected by one of the longest uninterrupted coral barriers of the world.

With a population of 1,2 million inhabitants, Mauritius has known a sustained growth during the last decade. Since 1979, the country has successfully entered into a phase of major industrial development, putting it at the level of newly industrialized countries. The government is committed to a free economy and has created the necessary environment conducive to the growth of the national economy without hindering social justice. The country has embarked on a multi-fold strategy based on the diversification of its production, value added exports, on the improvement of productivity and the protection of the environment.

Being politically stable, the country has achieved social harmony with an almost full level of employment. It benefited from an educated workforce which can adapt easily to new production systems. The partnerships between the public and the private sectors, coupled with a package of incentives, have created an environment leading to sustainable development. (MPA, Port Louis equipped to meet challenges of new millennium, 1998)

Port Louis is the capital and only harbour of the island. It is located on the northwest coast of the island, covering an area of 45 square km and is protected by a chain of mountains. It stands out as the central point of the administrative and economic affairs of the country. Port Louis Harbour is strategically situated in the centre of the Indian Ocean, on the shipping routes linking the African, Asian and Australian continents. The Port is of vital importance to the national economy with close to 95% of imports and exports transiting through it and is willing to position itself as the hub of the Indian Ocean between Europe, Africa and Asia.

The infrastructure and port services are continuously being improved to meet the challenges of an expanding economy. Striving to make Port Louis even more efficient and competitive, the Mauritius Ports Authority has invested heavily in training programs aimed at all levels of employees from the manual worker to top management. All port stakeholders work closely to pool together their resources and thus create the necessary impetus and synergy to convert Port Louis into a transshipment hub.

This synergy will enable the optimal use of a multi-skilled and flexible workforce and lead to enhanced productivity and longer working hours. This new port dynamism is backed by a modern telecommunications network, a diversified range of support services and an emerging freeport. This technological evolution will benefit directly the port users such as the shipping lines, their agents, the freight forwarders, the ship chandlers, the fuel suppliers and other providers of ancillary services to vessels.

Traffic in the port is fast growing. The Ports Authority has invested heavily to upgrade and provide new infrastructure to meet growing demand needs. Traffic growth exceeding 10% per annum is expected during the forthcoming years (Port News, Dec 2000).

The purpose of this study is to do an exercise on the level of economic activity which is generated by the major players of the port ancillary industries. This study will analyse the impact of port activity at two levels. The first level will examine total employment and revenue generated by all major directly related-port economic actors in 2000. The second will be more specific and will look at the spending patterns generated by two hypothetical port callers: a container vessel working 300 TEUs at a single call in the port; and a transshipment vessel working 100 TEUs at a single call in the port.

Chapter I of this paper will look at the history of Port Louis, how Port Louis became the harbour of Mauritius, how it has developed itself, what are the facilities that it offers to the port community and finally what are the future plans for the port? It will describe the setting up of the Mauritius Port Authority (MPA), its functions and its future role for the country.

Chapter II will look at the different port terminals which exist at the port. Each one of them will be elaborated but more emphasis will be laid on the New Container Terminal, Terminal III. The latter is expected to revolutionise the port activities and change the picture of Port Louis in the eyes of other countries. The other terminals will be presented together with the category of products which they handled.

Chapter III will look at the traffic performance at the port over the last years. The different types of cargoes which are handled at the port are enumerated. The change in the volume of cargo will be presented and the volume of imports and exports will be shown. Different types of cargo. which constitute the major components of imports and exports, will be displayed. Thereafter the container traffic will be presented together with its growth over the years. Vessel traffic will also be shown.

Chapter IV will address the first major area of analysis of the study. It will attempt to quantify the influence of the activities of the port on the local mauritian economy for the year 2000. It will present all the directly port-related activities while splitting them into the vessel-related activities and cargo-related activities. Then a thorough analysis of each port player will be elaborated together with their level of interest with the port activities. Their number of employment will be displayed and their accompanied wage bill. This will thus show the number of people who obtained employment through the port existence and their subsequent injection in the local economy.

Chapter V will address the second major area of analysis of the study. It will be more specific as it will look at the level of economic activity generated by a containerized vessel working 300 TEUs in the port. The problem statement, research objectives, and methodology used for this section will be presented. The different port players which will be affected by the call of a container vessel will be stated. Then the expenditure/cost/revenue accruing to each one of these port players will be calculated and

tabulated. The result will show the injection to the local economy by the working of a 300 TEUs containerized vessel at the port. A similar exercise will be simulated for a hypothetical container vessel handling only transshipment cargo.

Chapter VI will be the conclusion of the dissertation. The results of the findings will be presented and its usefulness to the port authorities will be mentioned. The areas for further research will be stated. The list of tables and figures and bibliography will be followed.

There was not much past literature which could be consulted for this study. This is because no similar studies were done previously in Mauritius. The closest study was one done by Teeloku L in 1984, in his paper entitled "The repercussions of port development on our national economy". This paper was concerned with the decrease in turnaround time, decrease in port detention surcharges, and other decrease in vessels dues when more investment is done in the port. A broad conceptual framework to assess the impact of port activities on their local host economies has, however, been presented by Morison & Jensen in their work on the port of Brisbane, and by Jones in his work on the port of Durban. The approach adopted in this paper follows that developed by Jones in his 1997 study entitled "The port of Durban and the Durban Metropolitan Economy". Other limitations faced in this study were the unwillingness of the private companies to release data. The smaller companies argue that the market they face is very limited and they were very reticent to give out private information.

Chapter II

2.0 Development of Port Louis Harbour.

This chapter will look at the developments which took place at Port Louis harbour over the years. The different stages in which the different terminals were set up will be explained. Particular emphasis will be laid on the New Container Terminal or Terminal 3. The latter is expected to give a new shape to the Port Louis harbour and to make it equal to other modern ports of the region. The other terminals will also be looked into.

2.1 The set up of the different terminals

Port Louis was selected for the development of the only port of the island because of its sheltered area. The port was a lighterage port without any deep-water berths. The first deepwater quay (Quay D) was constructed in 1929 and was capable of accommodating ships of up to 9m draught. A second deep-water quay (Quay 1) was set up to handle mainly fertilizer was constructed in 1971. The port was characterized by labour-intensive cargo operations particularly on sugar, which was the main export of Mauritius. This situation was causing difficulties to administer mainly due to labour disputes. The operation was very slow and ships at times had to wait up to three months in the port before being serviced. (Gobhurdhun S, 1996,8)

Modern port facilities were clearly needed by the mid-1970s and the World Bank came forward to finance the construction of three quays with necessary back-up space. The facilities comprised three alongside berths with water depth of 10.5m, capable of accommodating 15,000 DWT vessels, and an open storage area/container park. The

project was completed in 1979/80. During the same period a completely separate marine facility for the loading of sugar was conceived and completed in 1981. The facility has a loading capacity of 1400 tons per hour and a storage capacity of 350,000 tons of sugar. These facilities put an end to the conventional system of loading sugar employing labour and lighters and projected a new image of the Port Louis Harbour among shipping lines. Port detention charges, demurrage charges, undue waiting time for berths, which were the stigma attached to Port Louis Harbour of 1970, became a thing of the past. The Bulk Sugar Terminal was set up. (MPA, Port Handbook, 2000)

The Mauritius Marine Authority (MMA) also acquired a fleet of cargo-handling equipment, such as forklifts, tractor, trailers, yard gantry cranes, prime movers, mobile cranes and marine crafts such as tugs, pilot launch and so on. In 1985, the existing container park was expanded to about 7.0 hectares in order to cater for up to 100,000 TEUs. In 1983 the Authority awarded the contract for the reconstruction of Quay A, D and E.

The MMA also invested in dredging and reclamation projects whereby about 125 hectares of land were reclaimed in the port area; Mer Rouge and Les Salines. A new access channel was created at Mer Rouge. The main access channel was dredged in 1971 to 12.2 metres and its turning basin was enlarged in 1991 to 350 metres in diameter at a cost of MR 90 million. In 1990 a second access channel has been dredged at the English Channel having a published depth of 12.5 metres. (MPA, Port Handbook, 2000)

2.2 The New Container Terminal.

The main objective of the New Container Terminal project at Mer Rouge is to support the Government's policy for sustainable long-term growth through improvements in the efficiency and competitiveness of port services, in an environmentally sound manner. To this end, implementation of this project would increase port productivity, efficiency and capacity to meet the ever-increasing demand for port users at competitive rates through extension of facilities and mechanization of cargo handling activities.

Following analysis of the various development options of a dedicated container terminal, it was decided that the construction of a New Container Terminal at Mer Rouge would definitely meet the objectives of the Authority and would likely be the most cost effective alternative. The viability of this proposal has been confirmed on the basis of a wave-analysis study of the English Channel using all available weather data for the area. Furthermore, it should be noted that the Mer Rouge site, which was reclaimed in 1990 under a dredging and reclamation contract, allowed for construction works to proceed without causing any disruption whatsoever to port operations and leave the civil works contractor a clear site to complete the work in the minimum time possible.

In addition, availability of adequate space allows for extensions to meet any future requirements in terms of berthing space and/or storage areas. With the transfer of container operations to Mer Rouge, the existing deep-water berths and associated storage

facilities will be available immediately for other purposes as a result of reduction in berth occupancy.

The project is estimated to cost about MR 1.2 billion and external sources would be needed for financing. With the above project, the handling rate of container will increase significantly. It is expected that container cranes may reach up to 30 container lifts per hour. The average will be 25 container lifts per hour compared to 15 before the introduction of the NCT. It is anticipated that the service time of a vessel will be reduced by 50 per cent if two quay cranes are used to service a ship. The vessel turnaround time will be quicker and efficiency will be higher.

The New Container Terminal consists of a 560 metre quay with three post-panamax rail mounted quay cranes. There will be three berths: two berths are to be used to accommodate container vessels and one berth will handle petroleum tankers. All the berths will be equipped with bunker lines, water and telephone facilities. There will be a container park of 13 hectares which can handle a container traffic of 300 000 TEUs. Modern fire fighting equipment has also been installed.

Over the years the Mauritius Port Authority has thus set up various terminals. These have been erected as the level of economic activity increases and as additional facilities were felt to be required in the port area. The latest of the port's terminal is The New Container Terminal which is situated at Terminal III. A detailed breakdown of the different terminals that are in operation are listed in the following table.

2.3 The Other Terminals

TERMINAL I

Quay	Length (m)	Dredged Depth(m)	Type of cargo
A	210	12.2	Passenger, General Cargo, rice, etc
D	170	12.2	Black oil, wheat, molasses, edible oil, general cargo, Passengers and inter island trade
E	135	9	Passenger, Inter island
Trou Fanfaron No. 1	150	5.5	Fish
Trou Fanfaron No. 2	165	7	Fish

TERMINAL II

No. 1	123	12.2	Bulk, Fertilizer, Coal, White oil, Liquid Ammonia, Tallow & General cargo
No. 2	180	12.2	General cargo Containers
No. 3	185	12.2	General Cargo Containers
No. 4	185	12.2	Containers, LPG & Bitumen

TERMINAL III

Quay	Length (m)	Dredged depth m	Type of cargo
NCT	560	13.1	Containers and petroleum Products

(Source:MPA, Port Handbook, 2000)

The available covered storage facilities are at the disposal of industries which want to hire them. Some are privately owned and the Mauritius Port Authority owns some.

Covered Storage/Building facilities

Queens Warehouse	Leased to les Moulin de la Concorde for storage of Flour.
Shed A	To be used for the transit storage of rice
Shed E	Storage of Inter Island Cargo Traffic
Shed 2 & 3	Storage of General Cargo
Shed 1	Shelter for Equipment and general cargo
Stores buildings	Used as Stores for MPA
Workshop Building	Use as Workshop and Fire Station

(Source:Gobhurdhun S,1996, 20)

The above chapter has looked at the different terminals which exist at Port Louis harbour. Particular emphasis was put on the NCT. The latter is expected to bring in positive returns to investment in the very near future. The other terminals which are in place at Port Louis have also been looked into. The next chapter will look at the overall traffic performance which takes place in Port Louis. The volume of cargo handled will be considered in terms of total harbour tonnage. The number of containers as well as the number of vessels calling at Port Louis will also be looked into.

Chapter III

3.0 Port traffic performance at Port Louis

The previous chapter has looked at the different terminals which exist at Port Louis. It can be seen that there have been massive improvements to and investment in the port's equipment, so that nowadays even large Panamax vessels can berth at Port Louis. The following chapter will look at port traffic performance in terms of the volume of cargo handled at the port. Total harbour traffic will be examined and broken down into imports and exports. The number of containers as well as the number of vessels calling at Port Louis will also be looked into.

3.1 Total cargo handled at Port Louis

The traffic base at Port Louis has increased steadily over the years. Port Louis being the only harbour in Mauritius implies that all goods, irrespective of type, transited through the port. Data for period prior to 1987 were not available and whatever data which could be found prior to 1987, did not reflect a true and realistic picture of the port traffic. Therefore in this study the figures prior to 1987 were not analysed. Nevertheless the relevant figures for the financial years 1987 to 2000, shows that over the thirteen-year period, the volume of cargo handled at the port has almost doubled. In 1987 there were almost 2.5 million harbour tons of goods handled and in year 2000 the figure has gone up to almost 4.5 million harbour tons. This represents an increase of 2 million harbour tons of cargo over 13 years. The figures for the volume of cargo handled at Port Louis are shown in the Table 3.1 below. The data has been obtained from the courtesy of the Mauritius Ports Authority, in particular, Mr Philipe Lam Loong In. (Traffic Manager)

Table 3.1 Volume of cargo handled

YEAR	Import	Export	Trans	TOTAL
1987/1988	1,465,727	957,756	11,950	2,435,433
1988/1989	1,653,357	1,030,389	28,009	2,711,755
1989/1990	1,818,077	880,003	21,932	2,720,012
1990/1991	1,952,880	954,422	19,278	2,926,580
1991/1992	2,109,275	966,204	57,583	3,133,062
1992/1993	2,181,185	1,024,949	21,505	3,227,639
1993/1994	2,348,153	998,915	35,869	3,382,937
1994/1995	2,455,261	950,677	23,740	3,429,678
1995/1996	2,576,898	989,322	22,053	3,588,273
1996/1997	2,590,712	1,078,157	21,419	3,690,288
1997/1998	2,821,455	1,153,098	26,383	4,000,936
1998/1999	2,901,497	1,244,291	38,146	4,183,934
1999/2000	3,219,428	1,022,963	80,869	4,323,260

Source: MPA, Cargo Traffic for year 1987-2000.

The figures in the above table represent the total volume of all cargo (import, export and transshipment) handled at the port. These include bagged cargo, bulk cargo, general cargo containerized cargo, inter-island cargo and fish. It must again be recalled that Port Louis is the only harbour in Mauritius and 98 to 99 percent of national imports and exports are done through the port. Port Louis is not like the other ports of the world where it can specialise itself in a certain category of commodities and not handle other goods at all. Port Louis could thus be regarded as a 'combi-port' as it deals in all type of cargo. The different types of cargo which are handled at the port can be broken down into different categories.

3.2 Types of cargoes handled at Port Louis

- The Bulk Cargo
- Unitized and Break Bulk Cargo
- Bagged Cargo
- Fish
- Roll-on, Roll-off and other cargo
- Containers.

(Goburdhun S, 1996,22)

3.2.1 Bulk Cargo

Bulk products mainly consist of the following commodities.

Import	Export
Bitumen	Fertilizer
Soya Bean Meal	Sugar
Wheat	Molasses
Maize	Ships' Bunkers by pipeline
Fertilizer	Ships' Bunkers by barge
Coal	Wheat
Liquid Ammonia	Acid oil and Black Oil
Edible Oil	
Tallow	
Caustic soda	
Cement	

Petroleum White Oil	
Black Oil	
Products Liquid Petroleum Gas	

Sugar is loaded on ships by a mechanical shiploader which is connected to the storage shed by a conveyor belt. Cement is pumped by on board pumps to the cement silos. Wheat is discharged by a mechanical unloader and transported to wheat silos by conveyors. Petroleum is landed using pipelines to storage tanks. Some of these imports are later exported as ships' bunkers via barge and pipeline. The respective importing or exporting companies undertake these operations. However fertilizer, maize and coal are unloaded by ships' grabs and nets, using the stevedoring labour of the Cargo Handling Corporation. Therefore the loading and offloading of dry bulk cargoes are not completely mechanized and in fact is the area where most labour is employed.

3.2.2 Unitized and break bulk cargo.

The cargo mix is predominantly pallets, bags, bales, timber, steel products and paper. The vessels are usually berth at Quays 2 and 3; ships' gear is used for the loading and discharge operation. Forklifts move the cargo to and from open storage area. At the open storage area, forklift or mobile cranes are used to lift the cargo form the trailer and for receiving and delivery of cargo to/from trucks.

3.2.3 Bagged Cargo

At present only rice is imported in bags in large consignments. The rice handling is still an antiquated manual system. The ships are handled at midstream so the barges are towed to the granary where the port labour unloads the bags on elevators which transport the bags to the third floor of the granary. From there, it is distributed to other floors. This system is very costly as is so labour intensive, taking about 18-20 days to unload a shipload of 12,000 tons.

3.2.4 Fish Cargo

Fish is handled at the fishing port. Fish for the local market is discharged into trucks by ship gear or mobile cranes and fish for transshipment is unloaded into the Froid des Mascareignes cold storage.

3.2.5 Roll-on / Roll-off and other cargo.

Only cars and other vehicles are unloaded from car carriers by the Roll–on/Roll–off system and the vehicles are driven to import holding areas.

3.2.6 Container cargo.

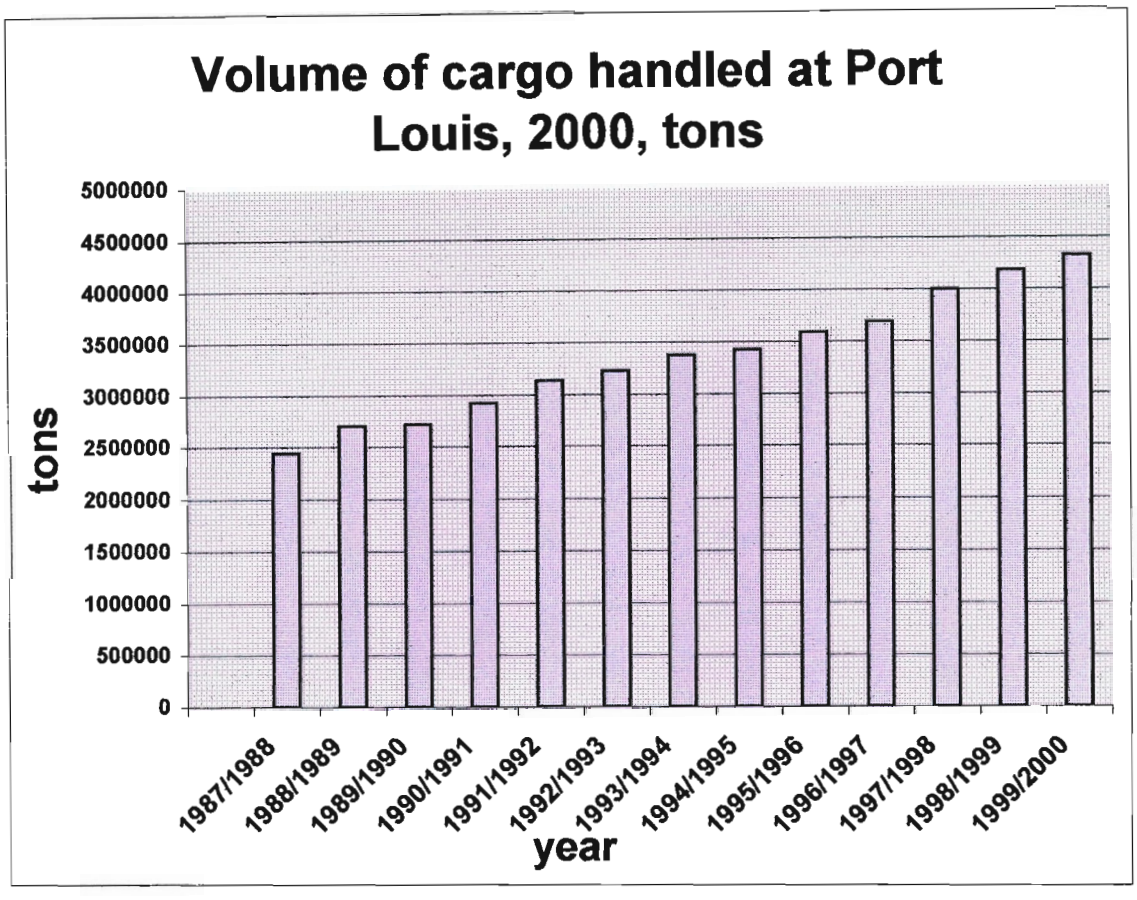
Previously all container vessels were mainly berthed at Quays 3 and 4. At times Quay 1 and 2 and Quay A were also used depending on the requirement and availability of quays. The majority of the container vessels calling at Port Louis were equipped with their own ships' gear and they were used to handle the containers. However with the introduction of the New Container Terminal (NCT) and with all its modern equipment, ships which do not

have their own gears can also be accommodated. The few gearless vessels are currently handled by rubber-tyred mobile cranes, supplied by the agents of the shipping lines. The limited reach and height of the mobile cranes were previously ill-suited for this work. Because of this problem, some ships occasionally had to be turned around to have access to all containers. Presently more than 96% of the containers transiting via Port Louis are handled at the NCT. The containers are unloaded on tractor-trailers which transport the containers to the container park where the unloading and stacking is carried out by heavy forklift. (Port News, 2000)

Figure 3.1 shows the volume of cargo handled at Port Louis. The figures include the imports, exports and transshipment cargoes transiting through Port Louis. The composition of the different products which are included in each category has been explained above. Therefore this means that in the bulk cargo, petroleum is also included. A rough estimate of the breakdown shows that petroleum white oil and black oil makes up of almost one-third of the volume of the Bulk Cargo. With regards to the total volume of cargo for year 2000, out of the 4.5 million tons of cargo stated, there was therefore almost one million tons of petroleum products handled.

It must also be noted that there has been a rather significant increase in the volume of transshipment cargo handled in the June financial year 1999/2000. It is with no doubt that the contribution of the Freeport authorities as well as the promotion of Mauritius as a transshipment status has helped to reach that volume of cargo handled.

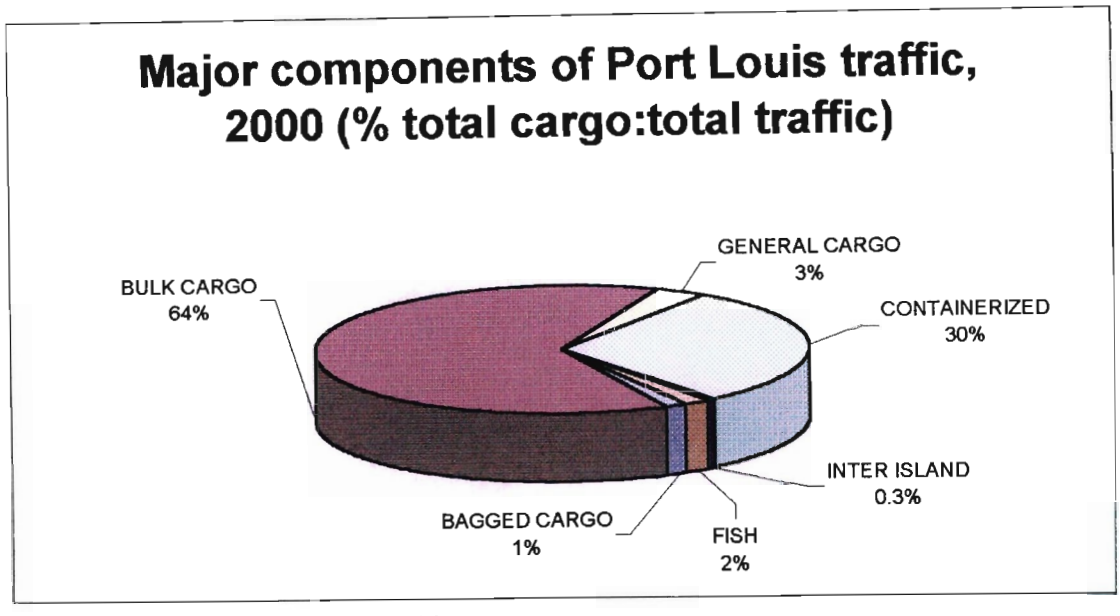
Figure 3.1



Source: MPA, Cargo Traffic for year 1987-2000

Figure 3.1 graphically represents the figures from Table 3.1. A deeper examination of the figures can be done in order to find out which commodity represents the biggest share of cargo traded at Port Louis. The statistics from the Mauritius Port Authority are analyzed and displayed in Figure 3.2. It can thus be seen that Bulk Cargo makes up of more than 60 per cent of the cargo handled. This figure reflects the trend in the past years as well.

Figure 3.2



Source: MPA, Cargo Traffic, 2000

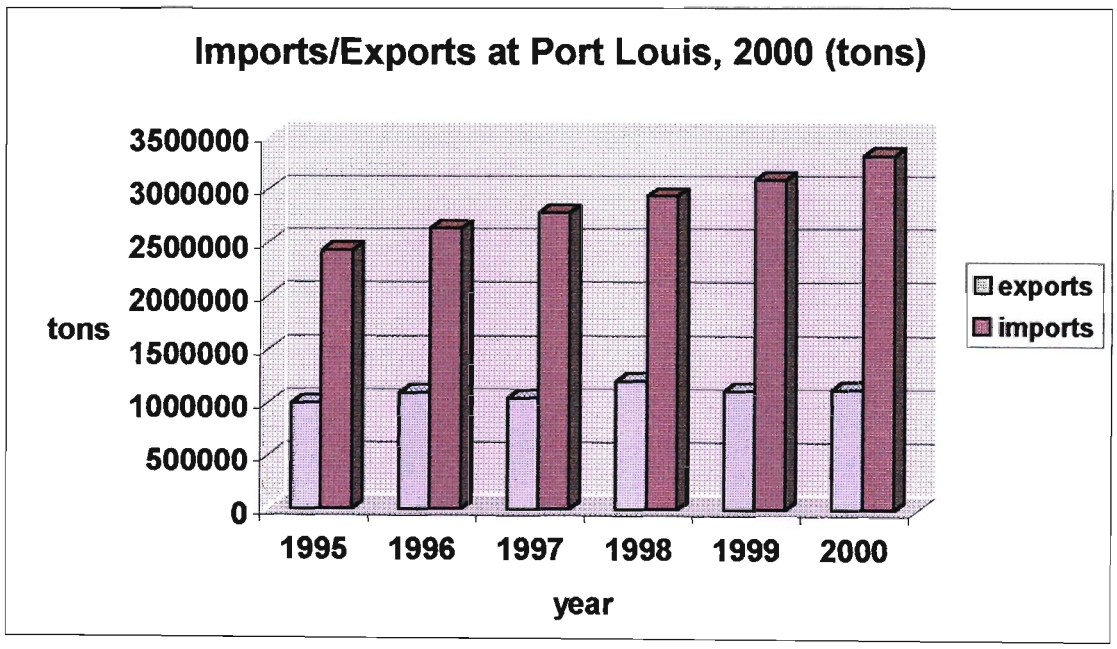
The above graph clearly shows that bulk cargo and containerized cargo represents the major share of the traffic at the port. The inter-island trade represents the imports and exports which are done with mainly the islands of Rodrigues and Agalega. The major product categories are dried and salted fish, coconut and other seafoods. The total volume of inter-island trade is practically negligible.

3.3 Imports and exports at Port Louis.

The next part of the analysis would be to find out the trend in the volume of imports and exports at Port Louis. It would be interesting to find out over the years how the imports of cargo has dominated the exports of cargo. The data was obtained from the Mauritius Port Authority and represented in Figure 3.3. It can thus be see that Imports has always exceeded Exports over the last five years shown. In year 2000, the volume of imports was

more than 3 times the volume of exports. The reason behind this high volume of imports is that most of the basic raw materials which Mauritius uses, are imported. Petroleum and cement on their own represent close to 50% of imported tonnage, that is, close to 1.5 million tons of products. On the other hand 700,000 tons of cargo (containerised cargo and sugar) is equivalent to 70% of the exports of Mauritius. Hence it can be said the main share of exports of Mauritius are much smaller than the imports. The next section will analyse the composition of imported goods at Port Louis.

Figure 3.3



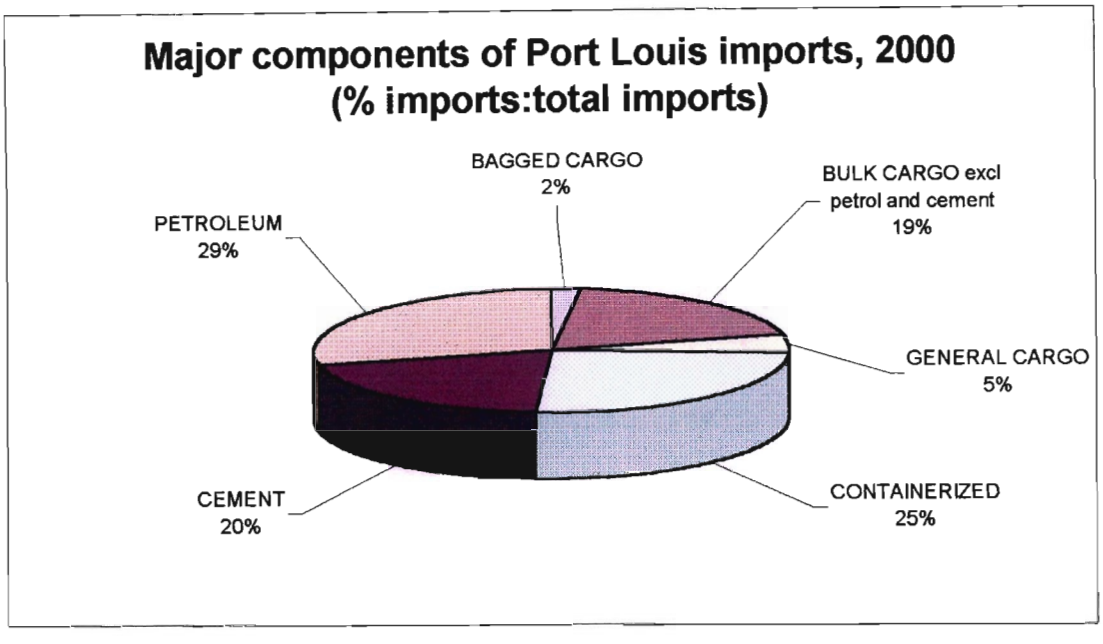
Source: Cargo Traffic for year 1995-2000

3.3.1 Imports at Port Louis.

Following the breakdown in the volume of imports and exports at Port Louis, this section will attempt to find out the commodities which make up the biggest share of imports. At first glance it can be said that bulk cargo represented the biggest share of cargo handled at the port. Thus it could as well be concluded that bulk cargo will also be the main

component of the imports at Port Louis. However deeper analysis needs to be done so as to find out the individual products. The data has been obtained from the courtesy of the Mauritius Port Authority and has been examined. The results of the analysis are displayed in Figure 3.4 below.

Figure 3.4



Source MPA, Cargo Traffic for year 1999-2000

Figure 3.4 shows the major categories of imports which the port handled in the financial year 1999/2000. Petroleum, Cement and Containerized cargo makes up of almost 75% of the imports of Mauritius transiting via Port Louis. Petroleum imports are controlled by the State Trading Corporation, who buys them on account of all the oil companies in Mauritius. Some of these petroleum imports are subsequently exported in the form of bunkers supplied to vessels. The bunkering companies have to place their orders to STC who then makes the fuel available to them. Bunker fuel is stored in the tanks of the bunker suppliers. For the financial year ending 2000 more than 902,000 tons of petroleum

products were imported at Port Louis. This represents more than 28% of cargo imports. The other big category of imports is cement. In 2000, 651,303 tons of cement were imported at Port Louis representing 20% of imports. Cement is not produced in Mauritius hence the economy relies exclusively on imports. The need for a cement silo has lead the authorities to work on a project to create such a silo.

Containerized goods also represent also a major share in the total volume of cargo imported. For the financial year ended June 2000, 810,379 tons of containerized cargo was imported in Mauritius representing almost 25% of total cargo imports. The bulk of the containerized commodities are capital goods and equipment for the production of finished goods in the textile factories or other industries. Foodstuffs are mostly imported in containerized form and also consists a major share of the total imports. The New Container Terminal has come to fill in the gap which was felt in the container industry. Nowadays there is enough space to handle containers up to year 2020 where the figure for the number of TEUs is expected to reach 300,000 mark.

Table 3.2 Total Imports handled at Port Louis (1999/2000).

Commodity	Tonnage	% of total imports
BAGGED CARGO	57,941	1.80
BULK CARGO (excluding cement and petroleum)	618,435	19.21
GENERAL CARGO	144,207	4.48
CONTAINERIZED	810379	24.96
CEMENT	651,303	20.23
PETROLEUM	902,811	28.04
Sub Total	3,178,418	98.73
Total	**3,219,428**	**100.00**

Source: MPA, Cargo Traffic for year 1999- 2000

3.3.2 Exports at Port Louis.

The same exercise as carried out above is repeated for exports transiting through Port Louis. Table 3.2 represents the main exports per product category handled at Port Louis for year ending June 2000. Containerized cargo consists mainly of the products from the Export Processing Zone. A discussion with the management of the textile industries revealed that about 90% of their products are exported in containers by ships to their countries of destination. The remaining 10 per cent of exports are done by airfreight but this is done only in times of urgent orders. Containerised cargo represents close to 38 per cent of exports equalling 380,000 tons.

The other major export products in tonnage terms which Mauritius deals in, is sugar. In the year ending June 2000 the total sugar volume was 313,200 tons. The authorities see this figure as a relatively low output. In fact in that particular year Mauritius faced a severe drought which is the reason for the low harvest and hence low exports of sugar. The usual sugar tonnages export in previous years amounts to over 500,000 tons yearly. There has been steady increase in the volume of sugar exported in the past years. The reason given was the research undertakes by the Mauritius Sugar Industry Research Institute which has been undertaking experiments so that the sugar content in the cane can be increased. This resulted in less sugar cane planted but more raw sugar harvested. However because of the drought in the financial year 1999/2000 there has been a drastic fall in the volume of sugar harvested. Nevertheless sugar still consisted of more that 30 per cent of the volume of cargo shipped. The estimates for the year 2000/2001 seem to be

very promising. Some sources are expecting to export almost 600,000 tons of sugar in this current year.

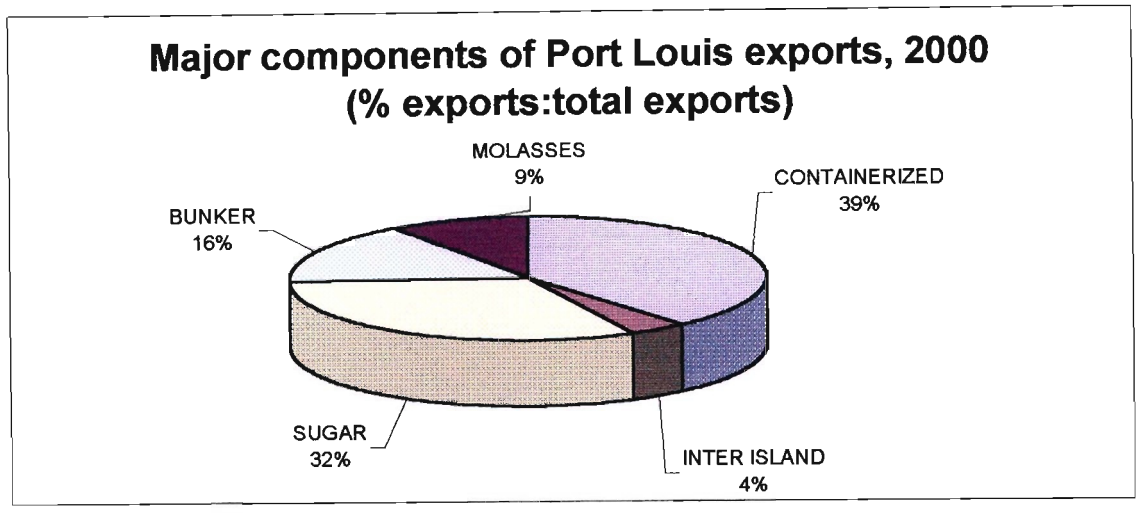
Table 3.3 Total exports handled at Port Louis (1999/2000)

Commodity	Tonnage	% total exports
CONTAINERISED	384,414	37.58%
SUGAR	313,200	30.62%
BUNKERS	158,406	15.49%
INTER ISLAND	39,429	3.85%
MOLASSES	93,617	9.15%
Sub total	989,066	96.69%
Total	**1,022,963**	**100.00%**

Source: MPA Cargo Traffic, 1999- 2000

The other big export in tonnage terms is bunker fuel to vessels calling at the port. However the marine fuel oil and marine gasoline oil have to be imported and then re-sold to the vessels. Thus the profit earned on this product represents the value added on the commodity. The products are landed from tanker vessels, stored and then reloaded onto other bunker callers. Hence the bunkering business differs from sugar which is planted and processed locally. Nevertheless it must not be assumed that the high tonnage of sugar is associated with a high income for the islands. Sugar is a low value item.

Figure 3.5



Source MPA, Cargo Traffic 1999-2000

Figure 3.5 shows the major components of exports transiting via Port Louis. It can thus be seen that containerised cargo has the biggest slice of the pie followed by sugar, bunkers, molasses and inter-island cargo. The above four categories represents close to 97 per cent as shown in Table 3.2 above.

3.4 The container traffic.

When Mauritius joined in the world trade in the late 1970s the container revolution had already started and was quickly expanding to all parts of the world. There was significant export by the Export Processing Zone in the textile industries and these were done through containers loaded at the port. By the end of the 1980's, there were more than 42,000 containers which were handled at the port. Ten years afterwards, in1997, this figure has almost trebled to reach more than 125,000. There was another boost in the number of containers handled at the port after the opening of the New Container Terminal in January 1999. During the Financial Year 1999/2000 there were more than 150,000

containers recorded by the port statistics. The increase in the container traffic is expected to have a double-digit increase over the next years to come.

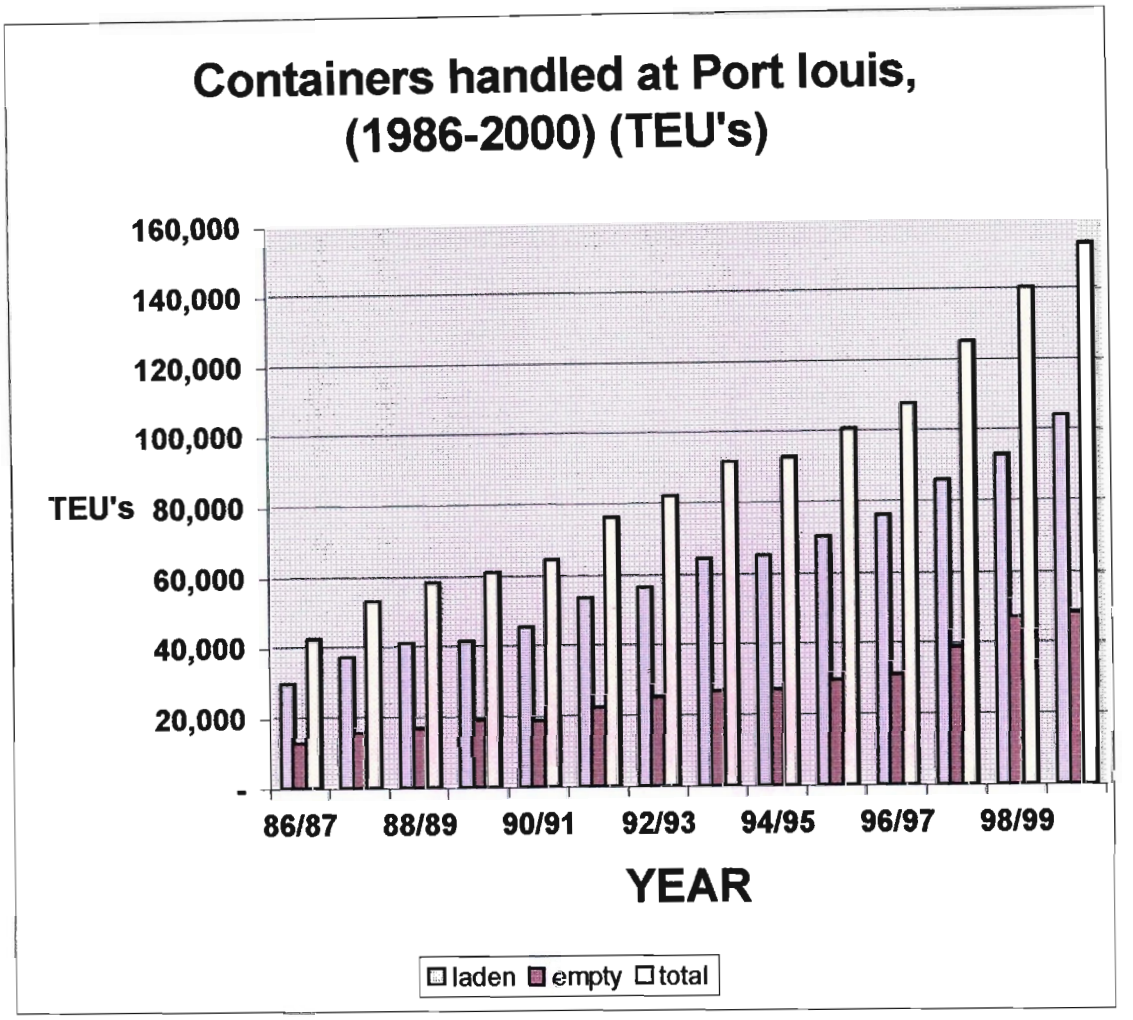
However it must be noted that there is also a net increase in the number of transshipment containers handled in the port. In year ending June 1999 there was just over 2000 transshipment containers and in year 2000 this figure has gone up to over 6000. The reason for this major increase is the marketing activities undertaken by the MPA in order to exploit Mauritius as a transshipment port and the promotion of Mauritius as having the characteristics of a hub status. Although the authorities are not overwhelmed with the present figures and the actual performance of the transshipment activities at the port, it nevertheless represents a net contribution to the port activities. The NCT has a capacity to handle more than 300,000 containers and the authorities are confident that they will be able to cope with traffic for the next twenty years.

The movement in the container traffic is shown in the Figure 3.6 below. It can be seen that there is a big discrepancy between the number of empty and laden containers. The number of laden containers is twice the number of empty containers. The figures from the port statistics reveal that there were more than 800,000 tons of commodities which were imported in containers. On the other hand there were only 400,000 tons of goods which were exported in containers. Thus this means that while while 800,000 tons of containerized goods are coming in the country only 400,000 tons are going out. There is hence an imbalance between the volume of containerized cargo which is imported and exported. It is this imbalance which helps to explain the discrepancy between the number

of laden and empty containers. The imports are done in the laden containers. Once the laden are in the island only half of them can be filled up with our exports. The remaining half of the containers must leave the island empty.

The trade authorities have brought forward another reason for the imbalance between the number of laden and empty containers. They advanced that the market for our exports does not correspond to the destination of the vessels. There is a significant amount of containers which come from the Far East, Singapore, Malaysia, Indonesia and India. The bulk of our exports in containers are the EPZ and textile products and our markets for these goods are in the Europe and more recently, the United States. The Far East does not represent a market for our exports in containers. Thus vessels going back to the Far East have to pick up empty boxes from Mauritius because although we import a significant amount of products from them, we do not have significant products to sell to them. The empty containers however belong to them and they must be returned to them. Thus if there is no export to these destinations then the containers must leave empty. This also explains the imbalance in trade between the laden and empty containers. The graph below shows the number of laden containers, empty containers and the total sum of the number of containers handled at Port Louis harbour.

Figure 3.6



Source: MPA Container Traffic 1987- 2000

3.5 Vessel traffic

Vessel traffic in Mauritian waters has experienced a significant growth over the past years. In 1986 statistics from the port authority reveals that there were 1314 vessels which visited Port Louis for the year. This figure has increased significantly to reach a peak of 1,823 in the year ended 1998. The following years faced a fall in the number of vessels

such that there were 1,819 vessels in year ending 1999 and 1,791 vessels calling at Port Louis in year ending June 2000.

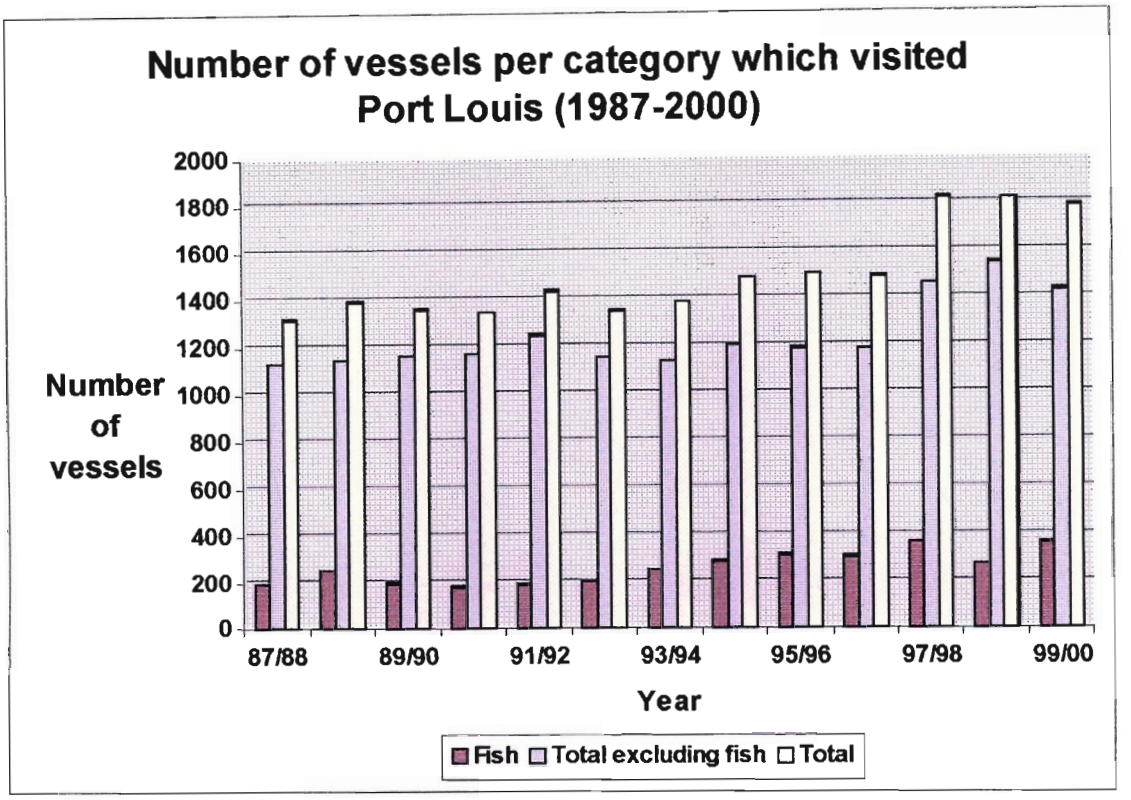
Over the years Port Louis, like most of the ports of the world, has experienced a change on the type of vessels calling at the port. Thus some categories of vessels, particularly conventional breakbulk cargo vessels have given way to containerised vessels. Fishing vessels as well have experienced major increase in the number calling at Port Louis. There were 606 vessels which called at Port Louis for fishing purposes. The port authorities advanced that the transshipment facilities offered by the cold storage Le Froid des Mascareignes has helped to attract more fishing vessels. The vessels can take advantage of the transshipment facilities at the cold storage to easily embark and disembark their cargo. They also have less congestion and hence faster turnaround time. They save on demurrage and other port charges which make it more profitable for them.

With regards to fully containerized vessels, it can be noted that there has been a fall in the number of vessels calling at Port Louis. The container vessels registered a drop of 24% from 486 vessels in 1998/1999 to 369 vessels in 1999/2000. However despite that there were fewer containerized vessels calling at the port, the average number of TEUs per call has increased. In 1998/1999 the average number of TEU per call was 279 while in 1999/2000 the average number of TEU per call increased to 356 implying at the same time that the number of containers being handled at the port has increased. This means that fewer vessels are bringing more containers to Port Louis. Thus it can be gathered that the size of the vessels calling at Port Louis has increased. In fact this occurred as a

consequence of the setting up of the New Container Terminal. With its deeper waters, larger turning basins, deeper access channel and the onshore gantry cranes, the NCT has set place for any kind of vessels to call at the port. Previously only those vessels which had their own cranes on board could berth at Port Louis but now with the new gantry cranes set up at the NCT, any kind of vessels can call at the port. The ship operators on their side find it more profitable to use bigger vessels on certain routes because of the advantages of economies of scale. (Port News, Dec 2000).

The other reason put forward for the fall in the number of vessels calling at Port Louis, is the restructuring of the some shipping lines among certain vessels. The vessels operators have entered into a cargo sharing agreement as the case between 'P&O Nedlloyd and Mitsui', and CMA/CGM'. These kinds of agreement are meant to improve the efficiency and profitability of certain vessels and consequently lead to the reduction in the number of port calls. Figure 3.7 below depicts the movement in the number of vessels calling at Port Louis.

Figure 3.7



Source: MPA, Vessel Traffic 1987- 2000

Chapter 3 has looked at the overall traffic performance in the port arenas. It was found in all sectors whether it is in the total harbour tons, vessels arrivals or container movements, have shown a net increase over the past years. The total volume of cargo handled has been examined and the different components which make up the imports and exports commodities have been analysed. The discrepancy between the number of empty and laden containers has been explained. Chapter 4 will now look at the number of people who are employed in the port's direct and indirect activities. The total wage bill will be estimated to see the level of injection in the local economy.

Chapter IV

4.0 The port's activities

The previous section has looked at the port traffic performance over the years. It was thus shown that in all sectors of port activities, the figures for imports, exports, containers and vessels have shown a net increase. The objective of this section is to look at the different players involved in the different port activities. These players could either be directly or indirectly related to the functions of the port. This section represents the first part of a quantitative analysis undertaken in this study. By the end of this chapter, it will be possible to identify the total contribution made to the national economy by the different port players with their subsequent multiplied effects.

In an island like Mauritius where more than 98% of imports and exports are effected through Port Louis, it would be difficult to enumerate all the players. Nevertheless an attempt will be made to look at the major players and their roles. Consequently, the level of economic activity generated by these players will be considered. For the purpose of this study, their contribution to the economic activities of Mauritius would be in terms of the number of jobs they have created and the associated wage bill for the employees involved. Thus the wage bill would represent an injection in the Mauritian economy. The exercise will essentially be a piece of static analysis, as a single time slice (based on 2000 port activity levels) will be used. The figures for the total number of employees and their total wage bill were obtained through interviews with the respective companies' personnel divisions, and from the "Registrar of companies" bureau at the Ministry of Commerce in Port Louis.

4.1 Directly port-related activities.

Before the different port players are looked at, a good starting point would be to list all the activities which can happen when a vessel call at a port. The questions which are asked are: when ships are serviced or when cargo is handled in the port of Port Louis, where and in what numbers are people employed, where is revenue generated and in what pursuits, and where are the costs incurred? (Jones, 1997)

These areas can perhaps best be illustrated schematically by setting out some of the principal chains of ship-related and cargo related functions.

Vessel-related activities

Mauritius Port Authority

Marine services	Pilotage Tugs Dredging services Port construction Berthing services Lighthouses
Offshore services	Towage Launch services
Bunkering services	Pipeline and barge
Ships agency	Port husbandry Crew support Security
Ship chandlers	Deck and engine spares Victualling
Ship repairs	Dry-dock repairs

	Painting and cleaning Diving services
Shipowners and operators	Owners and representatives Charter operators Shipbrokers
Other state departments	Ministry of Trade and Shipping

Cargo-related economic activities

Mauritius Port Authority

Cargo services	Cargo infrastructure Bulk appliances Breakbulk cargo handling Container terminal Container cartage Combi terminals
Stevedoring	Cargo Handling Corporation Limited
Ships Agency	Freight canvassing Freight services
Clearing and forwarding agents	Documentation Custom clearances Warehousing Financial services Transport
Terminal operators	Bulk Liquid-bulk handling Combi terminals
Containers	Licensed container depots Container parks Container logistics Container repair
Road Haulage	Warehousing Regional transport
Pipeline services	Oil majors State Trading Corporation

Customs and Excise

Documentation
Inspection

(Adapted from Jones T, 1997)

The above schema is by no means a complete list of all the cargo and vessel related activities. A host of activities have been omitted. For example, taxi services and informal sector activities such as the services of call girls have been left out. Also a number of the cargo related activities could be overlapping the vessel related. The two sets of activities are not readily separable. A detailed coverage of each of these activities would be too tedious, hence only the biggest players will be considered. These include the Mauritius Port Authority, Cargo Handling Corporation Limited, State Trading Corporation, the Bunkering industries, Clearing and Forwarding industries, Ships agencies, other Port Operators, Ship Repair industry, Container Parks. Then a brief description of the indirectly industries will be mentioned. Lastly a table drawing up the number of people employed and their wage bill will be shown.

4.1.1 Mauritius Ports Authority.

During the 1980's and 1990's, Mauritius showed that given the right economic policies, easy access to world markets and a dynamic workforce, it could transform itself quickly from a purely monocrop export and tourism based economy, to a model for many developing nations. Over the past 20 years the country's gross domestic product has grown significantly to rank Mauritius among the most affluent in sub-Saharan Africa on a per capita basis. This, in turn, has placed huge strains on the island's existing infrastructure, which has been obliged to keep pace with soaring economic growth.

In the case of the harbour at Port Louis, this has led the government to support a major investment programme designed to bring the harbour up to world-class standards, culminating in 1998 with the opening of a 26-hectare container terminal at a cost of US$ 80 million. The new container terminal as a number of other major infrastructural developments are seen as the future for Port Louis as the government seeks to transform the harbour from purely national to international status. (MPA, Port Handbook, 2000)

In line with the multi million dollar investments and prior to the opening of the new terminal has come the reorganization of the Mauritius Marine Authority (MMA) into the Mauritius Port Authority (MPA) and the introduction of new practices at the Cargo Handling Corporation Limited (CHCL), which is now a fully-fledged operator.

For many years the port authority had a vision of the future for Port Louis as a modern regional cargo-handling hub. This dream is now close to reality with all the necessary equipment and facilities in place. Government has always placed Port Louis harbour as a key element in its long term plans for the economic development of the country. Not only is Port Louis seen as a separate foreign exchange earner, but it is also important to the development of other sectors of the economy such as sugar, textiles and tourism and cruise shipping as well.

Furthermore, the harbour facilities have formed an integral part of the nation's free trade zone development, which has taken shape alongside the port's new container terminal.

The MPA, CHCL and the Mauritius Freeport Authority are jointly involved in marketing these integrated facilities. Alongside the port's higher profile has come a redefinition of the MPA's functions from an operator with multi – faceted functions to that of a regulator and landlord with a commercial approach. The port offers concessions to the private sector and is required to achieve a fair return on investment. MPA has become commercial in other ways. During 1999 the MPA undertook a wide ranging tariff study aimed at making harbour changes more competitive, flexible and volume related. This has resulted, for example, in special discounts on dues for transshipment traffic.

The MPA also reduced its own workforce by around 25% last year and undertook a review of all working hours. A third shift for pilotage and other marine services is being implemented. At the same time, new equipment including three gantry cranes and four new tugs have been purchased by the MPA, while the CHCL has taken delivery of new reach stackers and other cargo-handling gear.

The MPA employs about 370 people representing a wage bill of MR 110 million annually. The MPA is not the biggest in terms of number of people employed. This is because of the new role of the MPA has led to several function being left to the CHCL. Nevertheless MPA is the highest in terms of wage bill because a certain number of CHCL staffs are stevedores with a low average income. (MPA, Port Handbook, 2000)

4.1.2 The Clearing and Forwarding Industry.

The clearing and forwarding industry lies at the very heart of both the seafreight and airfreight markets. They are intimately integrated into all the activities at the port since they represent the interests of both the cargo owner and the carrier. They are very much involved in the preparation of Bills of Entry in cases of imports, managing with customs and making sure that the documentation is completed done in the proper way and time. They sort out any verification if required. Some Clearing and Forwarding houses undertake payment of customs duties and later claim these back from the consignees of the cargo. Some also operate their own container depots/parks where containers are stored until collected by their respective owners; some run their own bonded warehousing; some extend their activities into the road haulage industry; and some conduct logistic tracking of cargo as well. (Interview with Daniel Ng, Cargo Express)

In Mauritius the major part of the clearing and forwarding industries are grouped into an association called the Association Professionelle des Transitaires (*Professional Association of Freight Forwarders*). There are 25 members of that association. The association now groups the biggest C&F companies in Mauritius namely Cargo Express from the Rogers group and Somatrans from the IBL group. Previously it was only these two companies which dominated the market but after the 1980's when Mauritius entered into its new phase of development the number of C&F companies increased. These two big companies have their own container parks and road haulage companies.

The bulk of the revenues of the C&F industry come in the form of charges to the respective parties. They are remunerated for their expertise in the preparation of the bills and other documentations, transport of the containers, storage and their other services. The introduction of e-commerce and the Internet and other electronic forms of communication has decreased the number of personnel involved in the C&F industry. Nevertheless it still represents a rather big employer in the shipping arena. There are approximately 80 companies representing 800 people in the whole C&F industry which generate an approximate wage bill of about MR 65 million annually.

4.1.3 State Trading Corporation.

The State Trading Corporation was set up in1982. Its objectives include the negotiations for the purchase of goods, the engagement in the manufacture or processing of goods and ensuring their marketing and to export goods amongst others. In laying down the rules governing the functioning of the State Trading Corporation, the Government of Mauritius has been guided by the willingness to give flexibility, maximum efficiency and reasonable autonomy to the Corporation while ensuring that it remains accountable to the Government and the National Assembly. The corporation's status undoubtedly gives greater flexibility than a government department. With the appointment of a Board of Directors, comprising representatives from both the public and private sector, with extensive powers to administer the Corporation, a high degree of autonomy, which is so vital to a commercial concern, is ensured. This relative autonomy and the presence of experienced businessmen on the Board contribute to greater efficiency. Finally, by giving certain powers to the Minister responsible for Trade and Shipping, and by subjecting the

Corporation to the Statutory Bodies (Accounts and Audit) Act, the Government has ensured that the Corporation would remain accountable to it.

Given the strategic role of imported petroleum products in the Mauritian economy and their impact on the balance of trade, the Government decided in 1983 that there should be some public intervention in this sector. The Corporation was instructed by Government to take over from the existing importers, the importation of 25% of the country's domestic market requirements. The good performance of the Corporation, especially in terms of prices obtained with resulting substantial savings in foreign exchange prompted the Government to increase the STC's share of the domestic market to 50% in 1984. Subsequently, the Corporation was asked to take over the importation of all petroleum products, including those destined to international trade (bunker and aviation fuel) and it has since 1985 been importing these products to meet the total requirements of the country. Petroleum products comprise around 95 000 tons of gasoline, 300 000 tons of gasoil, 250 000 tons of dual-purpose kerosene and 150 000 tons of fuel oil to make a total importation of some 800 000 tons of petroleum products. These products are then delivered to the four retailing petroleum companies: Shell, Caltex, Total and Esso.

With regard to the cement trade, the Mauritius Portland Cement Co ltd had the monopoly to import and distribute cement in Mauritius since 1957. The Government felt that it would be in the interest of the country to have more than one importer and in 1984 the STC was entrusted with the additional responsibility of importing 25% of the domestic requirements. In 1985 STC's share was increased to 50% and it has remained like this up

to now. However the other 50% has been shared between two companies namely Kolos Ltd and Mauritius Portland Cement Ltd. The 50% of the importation which STC does for the local market represents 300 000 tons a year. The STC buys the cement in bulk and resells in bulk to the other two companies. The latter bags the cement for retail sale to the public. (Interview with Mrs Domaingue, STC)

The corporation handles some 80 000 tons of wheat flour a year representing 50% of the local market. The other 50% is handled by the Les Moulin de la Concordes ltd. Flour is imported in bags of 50 kg but they are containerized. STC is the sole importer (some 50 000 tons a year) of subsidized non-luxury rice from India, China and Pakistan. The Corporation is also involved in the importation of luxury rice (some 10 000 tons a year) where it does not have a monopoly. Rice on its part is imported in bags of 50kgs as well as in loose bulk form. It makes the offloading of rice very labour intensive. STC also purchases 1,200 tons a year of sugar from the Mauritius Sugar Syndicate, which is sold in small amounts in Rodrigues. (STC, Reports and Accounts, 1999)

The turnover of STC is in the region of MR 9 billion annually. The four main products, which STC deals in, are petroleum, flour, rice and cement. The STC does not cover any storage cost with regards to the petroleum products because as soon as they arrive, they are delivered to the four local petroleum companies. Flour and rice are stored in Shed A and Shed 1. The latter are rented from the MPA and an annual rental fee of MR 8m is paid to the MPA. Cement follows the same process as the petroleum products and they are directly delivered to the two companies Kolos Ltd and Mauritius Portland Cement

Ltd. STC faces a cargo handling fee of MR 8.2 million and port fees of MR12 million annually for its activities at the port. There are 300 people employed by the STC who deals with the importation and exportation of goods via the port. The wage bill for these employees represents approximately MR45 million. (STC, Reports and Accounts, 1999)

4.1.4 The Bunkering industry.

Lacking indigenous oil supplies, or even a refinery of its own, Mauritius is clearly disadvantaged in the world bunker market. Nevertheless these unfavourable circumstances are more than compensated for by the island's strategic position in the Indian Ocean and by excellent service provided by local suppliers.

The total annual volume of bunker fuel supplied to vessels making calls at Port Louis amounts to some 200,000 metric tons. Of this approximately 140,000 metric tons is Marine Gas Oil (MGO) – often lifted by fishing vessels – with the balance accounted for by sales of Marine Fuel Oil (MFO) used by other vessels.

The market is regulated in such a way that all four suppliers must buy their oil from the State Trading Corporation, which receives bulk fuel supplies by tanker from the Arabian Gulf every 20 days or so. Shell, the market leader with a 65 per cent share of the market, supplies vessels using a 530-ton barge as well as ex-wharf. The other three suppliers – Esso, Caltex and Total – are restricted to facilities at the fish quay and deliver only MGO, mostly to Taiwanese fishing vessels. This makes the market for the fishing vessels very competitive. (Interview with Mrs Michelle Wong Min, Shell)

Shell uses its barge *(L'ami Constant)* to supply vessels making bunker calls off Port Louis. The barge can supply any vessel within a two miles limit off the perimeter of the port. There is a additional cost of US$ 7 per metric ton, which the barge supplies to vessels. The barge has brought a lot of advantages to the bunker industry in Mauritius. There are certain vessels which are in a hurry to get to their next port call and they do not want to get inside the port areas in case they get congested. Hence they call for the service of the barge. Vessels urgently in need of bunkers may also call upon the barge to provide bunkers before they come alongside. Shell has thus the facility to reach such kind of vessels even if they are off the quay. However they must still remain in the parameter of 2 miles from the port area. The use of the barge has make it possible to reach any type of vessels which visits our waters. The company also has the license to use the pipeline facilities at Quay A, D, E and Quay 1,2,3.

The four companies involved in the bunkering industry have to incur a licence fee payable to the MPA for the use and operation of the port facilities. Thus each time a tanker calls in the port and they have to offload the tanker they have to pay a fee of MR 15,000 per tanker. This fee is usually set in the price charged by the STC. On the other hand when a vessel calls in the port for bunkers, the port authorities charge a fee of US$ 1,48 per tons of fuel supplied. This fee, termed a 'pipeline dues' represents a fee for the rental of the pipeline facilities at the port. (Interview with Mrs Bunwharee, MPA)

Approximately 800,000 metric tons of petroleum products are pumped through the pipelines of the port annually. This figure includes all MGO and MFO and other petroleum products imported by Mauritius. Out of this figure some 200,000 metric tons are sold as bunkers to vessels calling at Port Louis. The MPA has generated almost MR 45 million for the year 2000 from pipeline dues.

The purpose of this study is look at the industries which are directly related to the activities of the port. Thus in this regard, only the 200,000 metric tons of bunkers supplied to the vessels calling at Port Louis will be looked at. These 200,000 metric tons are shared among the four bunkering companies mentioned above where Shell has the biggest slice of the pie. Interviews with these companies made it quite clear that they have a particular section of their company which deals with the bunkering of vessels. Their functions relate mainly to the offloading of tankers, supply of bunker fuel to vessels, administration and operations. However given the volume of operations, the number of people employed in these activities is very limited. The bunkering department of there four industries provides employment for 45 people with a wage bill of MR 9 million annually.

Mauritius finds itself in a strategic position where several vessels serving the South Indian Ocean route stop at Port Louis to make provision for bunkers. The other ports of the region, namely the port of Reunion and the ports of Madagascar are not great competitors with regards to Mauritius. Their prices are higher than local prices. Thus the next decent bunker call would be Durban on the west side route or Australia in the east

side routes or Colombo in the north. Thus there is a significant distance from Mauritius to the next feasible ports of call, which makes the island an attractive of bunker port. Also there are significant numbers of fishing vessels that fish in our waters and because of the price competitiveness and the lack of congestion, consider Port Louis to be their only obvious source of bunkers and stores.

4.1.5 The Ships Agencies

The principal task of the clearing and forwarding agents is to represent the interests of the family of cargo owners. Similar tasks are faced by the ships agencies which represent the interests of shipowners. Ships agents' functions include basic ships husbandry (seeing to the welfare of vessels and their crews), interfacing with the port authorities, maritime safety and the procurement and safe handling of cargoes. Ships agents are thus concerned with every aspect of the operations of the port.

In Mauritius the ship agents are grouped under the association called *"Association Professionelle des Agents Maritimes"*. Once again the two big ship agents in Mauritius are grouped under the Rogers Group and the Ireland Blyth (IBL) Group. Between the two of them they represents almost 10 shipping lines. The IBL group is divided into three companies in its shipping cluster namely, Blyth Brothers & Co Ltd, Adam & Co Ltd and Ireland Fraser & Co Ltd. The Rogers shipping cluster is represented by two companies namely Rogers Shipping & Co Ltd and Scott & Co Ltd. These two groups are the oldest ship agents in Mauritius. Then there are other ship agents like Maersk (Mauritius) Ltd, Union Shipping from the ABC Group representing the Ahrenkiel Line Service, Happy

World Shipping representing Pacific International Line and the IKS group. There are close to 42 shipping agents in Mauritius representing many different carrying lines. A list of the main ship agents and the lines that they represent are shown below.

Shipping lines	Agents
Ahrenkiel Liner Services	Union Shipping Ltd
Coraline	Mauritius Shipping Corporation Ltd
Capricorne	**Adam & Co Ltd (Ireland Blyth Group)**
CMA/CGM Group	CGM French Line (Maurice)
Delmas (Ocean Indien)	**Adam & Co Ltd (Ireland Blyth Group)**
Scandinavian East African Line (SEAL)	**Scott Shipping Ltd (Rogers Group)**
Express Container Line Sea Consortium	Globe Freight Ltd
Evergreen Marine Corporation	Fast Shipping & Transportation Co Ltd
Fu Hai Line	Far East Shipping Ltd
Hoegh Ugland Auto Liners (HUAL)	Meyer Cury & Co Ltd
K Line	**Scott Shipping Ltd (Rogers Group)**
Mediterranean Shipping Company (Mauritius) Ltd	**Mediterranean Shipping Company (Rogers Group)**
Mitsui OSK Line	**Blyth Bros Shipping (Ireland Blyth Group)**
Nedlloyd Lines	**Ireland Fraser & Co Ltd (Ireland Blyth Group)**
Mitsui Pure Car Carrier	**Blyth Bros Shipping (Ireland Blyth Group)**
Mer Austral	**Scott Shipping Ltd (Rogers Group)**
Maersk (Mauritius) Ltd	Mauritius Freeport Development
South Bay Line	Nantai Shipping Entreprises Co Ltd
Pacific International Line	Pacific World Shipping Ltd (Happy World Group)
Delmas	**Adam & Co Ltd (Ireland Blyth Group)**
Uniglory	Fast Shipping & Transportation Co Ltd

Source: MFA, Shipping connections, Jan 2000

Statistics for the year 2000 shows that the vessels represented by the group Rogers and IBL have the highest tonnage in the port traffic. Rogers handled 27,916 TEUs that is 28,85% and IBL had 40,43% or 37, 813 TEUs. IBL is the first ship agency in Mauritius which has obtained the ISO 9002 certificate. This shows that the operations of the ship agencies in Mauritius have attained a rather high level in the world market. In Mauritius

these agents only represent the interests of the vessels operators and the latter remain the decision maker. The vessels operators can at any time decide to change their port calls.

Port Louis is more often regarded as a wayport of call and not as a final terminal port. Port Louis is thus principally a transit port meaning that vessels only stop there on their way to another port. It is not often regarded as the last port call on a particular route. Thus if vessels operators do not find it profitable or advantageous for them to stop at Port Louis, they can very well skip their call at Port Louis. Therefore the study will reveal the benefits in value terms of having a vessel calling at Port Louis. The reason behind the uncertainty in using Port Louis as a port call is linked to the fact that given the size of our economy and the volume of traffic which is done at the port for the local economy is relatively small compared to the other bigger ports in the area. This is another reason why the Freeport of Mauritius did not have such a big boost. (Interview with Rene Sanson, Rogers)

Nevertheless the service given at the port is rather attractive. The ship agencies are very aware that the installation of the cranes in the NCT will definitely add to the number of vessels which call at the port. This is because previously vessels that were not equipped which cranes could not call at Port Louis and now with these cranes any vessels up to Panamax size can berth at NCT. The new equipment at the NCT is comparable to that at other ports in the region. Also the reorganization of the stevedores and their working hours have led to vessels savings on marine dues and valuable time.

The ship agencies are very vulnerable to exogenous factors like the trend in the international trade. With the African Growth Opportunity Act (AGOA), for example, the textile exportation towards countries like the United States has seen a boost. Similarly the importation of the beef has been affected with epidemics like Foot and Mouth disease and Mad Cow. This resulted in the importation from Southern African countries and Europe falling and the importation from other countries like Australia increasing. The shipping agents who represent vessels serving the South African and European routes are adversely affected with regards to those agents who deal with lines covering the Australia and the New Zealand route. These are factors beyond the control of the ship agents and hence considerable canvassing had to be done in order to fill up the vessels with other cargo type resulting in the cancellation of some trips.

The ship agents view that there should be competition in the cargo handling to the extent that there should be another company next to CHCL in Mauritius. Also they are in favour of the idea that IBL had put forward in order to set up another dry dock repair yard. They hope that there will be some competition with Taylor Smith & Co Ltd which falls under the Rogers Group. The ship agents welcome the idea of a modern passenger terminal with the facilities like a commercial centre, restaurants, exposition centres among others. They also express a desire to be included in the road shows which the Port Authorities often run, so that they are given the chance to sell the port of Port Louis to other vessel operators. (Interview with Dany Sooben, IBL)

Rogers and IBL group share the biggest slice of the pie. The ship agency industry generates a turnover of more that MR 250 million annually. The biggest source of revenue remains the commission fee from cargo owners and ship owners. They employ some 100 to 120 individuals representing a wage bill of more than MR 9 million.

4.1.6 The Cargo Handling Corporation Limited

The Cargo Handling Corporation Ltd (CHCL) is a private company with state shareholding and manages port-handling operations namely, loading, unloading, delivery and reception. CHCL is an independent operator which has entered into a Concession Contract with the Mauritius Port Authority for general cargo container handling at all three terminals. The Concession Contract defines among others, the responsibilities of CHCL, the productivity targets, financial aspects and control to be exercised by the Authority. The performance monitoring at the terminals and other operational constraints are discussed at joint MPA and CHCL committees on a regular basis.

The ambition of Port Louis harbour to become a hub and the most efficient transshipment port of the region, has required a major change in the culture of the workforce. Compared to other ports of the region, Port Louis stands out by the numerous advantages it offers, from competitive tariffs, organized workforce backed by smooth industrial relations, high security for cargo in transit and a personalized customer service.

The prime objective of the CHCL is to deliver a level of service in line with container terminal operators of Asia and Europe, both in terms of quality and efficiency, but at better tariff levels. The other objectives of the CHCL are to:

- Reduce the transshipment time
- Reduce the waiting time of vessels
- Provide a reliable and competitive range of services
- Build up customer care and emphasize the need for marketing and public relations.

The stevedoring industry is Mauritius in monopolised in the sense that there is only one company which has the license to operate stevedores in the port. Through its concession contract, CHCL has the right to all types of stevedoring activities in the port premises. CHCL has thus become the port operator but not a terminal owner. The MPA remains the terminal owner and acts as the landlord. All the equipment and machineries are owned and operated by the CHCL. In 1997, CHCL came out from the umbrella of the MPA. It bought over all MPA's equipment with the exception of the new cranes at the NCT. All the forklifts, trailers, reach trucks which the CHCL uses, are owned by the company. The cost of the three new cranes which are at the New Container Terminal, were too expensive to be financed by the CHCL, thus the cranes have been bought by the MPA and then rented to the CHCL. (Interview with Mr Foster, CHCL)

The cost of the Concession Contract amounts to MR80 million annually. This fee is paid annually by the CHCL to the MPA for the license to operate in the port premises. The fee

is divided between the three terminals as follows: terminal I and II cost MR 5 million and terminal III cost MR 75 million. The main activities of the CHCL consisted of loading and discharge of vessels and then transporting the goods to the container parks. The container park is owned by the MPA which is rented to the CHCL and included in the MR 75 million concession contract. (MPA, Port Handbook, 2000)

With the introduction of the NCT, container-handling activities have changed to the extent that more than 98 per cent of containers which were handled at Port Louis in 2000, were handled at the NCT. The other two terminals have restricted their transactions to bulk and general cargo. Only inter-island container traffic operated by the 'Mauritius Pride' vessel are handled at the other two terminals. The average productivity in Equivalent Container Movements (ECM) per gross crane hour for Financial Year 1999/2000 reached 16.4. This means that on average 16.4 container moves were effered per crane-hour using the cranes available at the NCT. The highest monthly productivity was 17.9 ECM/gross crane hour in June 2000. During Financial Year 1999/2000, 67 vessels attained more than 20 ECM/gross crane hour and the highest productivity recorded was 31 ECM/gross crane hour. (Port News, Dec 2000)

CHCL is faced with a rather rigid trade union, has a history of regular strike action. This present year 2000/2001, the trade union has managed to secure an 8 per cent increase in wages while in other sectors of the economy compensation increases have generally not exceeded 5 per cent. Because of the frequent strikes and go-slows which occurred in past years, the CHCL was forced to undertake major restructuring of its work force. With

mechanization and investment in new equipment, the level of employment has fallen substantially over the years. There was a major restructuring which occurred in the 1997 when the CHCL became independent of the MPA. A heavy compensation package had to be paid to those who became redundant and the CHCL is still paying compensations. This is one of the reason why it is reported that the CHCL has not been reporting profit for the last 3 years. The other reasons advanced by the authorities relate to the huge capital expenditure that the company incurred when it bought over the equipment from the MPA. The CHCL is now working on a project of computerization which would facilitate the tracking of containers and the loading and offloading of vessels. With this new system, some more jobs would be lost thus leading to another fall in the number of people employed. For the financial year ending June 2000 there were 980 employees with a wage bill of MR 356 million annually. (CHCL, Reports and Accounts, 1999-2000)

4.1.7 Ship repair yards.

Mauritius has had a shiprepair yard since the early part of the last century. Now after nearly 100 years continuous and exclusive operation, the Taylor Smith Shipyard & Engineering Works in Port Louis is about to face competition for the first time.

The Taylor Smith yard comprises two dry docks for vessels up to 100 meters in length. These vessels are mainly Mauritian, French and Taiwanese fishing boats, which utilise the yard for hull cleaning, engine maintenance and general overhaul work. The two dry docks give Taylor Smith great flexibility in handling a wide range of jobs at short notice.

Added to the yard's reputation for excellent workmanship and its all-inclusive tariffs, Taylor Smith has enjoyed a high level of repeat business.

The shipyard, which is part of the diversified Rogers group, employs around 80 workers, with a further 100 engaged by the company's engineering division. The company also operates the barge 'Water Lily' to supply water to vessels in the roadstead. Taylor Smith operates in an already fiercely competitive Indian Ocean shiprepair market and now has the prospect of a second shipyard in Mauritius. Local rival, IBL, is behind a plan to create a second repair facility in Port Louis. The MR350 million two-phase project, which is in association with Chantier Piriou of France, involves building a 200-metre repair berth with 8.5 metres alongside depth and associated workshop facilities.

Ship repair operations are very capital intensive, as where high-tech equipment is used. These machineries are handled with highly qualified people working in all sectors of the company. The activities of Taylor Smith provide a series of backward linkages to other enterprises of the local economy. The marine division of the company on its own creates a wage bill of approximately MR 8 million in its direct first round of employment of 80 employees. (Taylor Smith Co ltd, Reports and Accounts, 1999-2000)

4.1.8 The container freight station.

The functions of the container depot are mainly the stuffing and stacking of containers, groupage activities, handling and storage of full containers. These activities are done on behalf of the cargo owner or consignees. The container storage industry in Mauritius is

thus very capital intensive with only 160 people employed only in the container parks with a wage bill of MR 20 million. (Interview with Mr Squelbeck, Marine Transport Ltd)

4.1.9 Other port-related activities.

There are numerous other port ancillary industries associated with the port operations. However these companies are not big enough so that they specialize themselves only in the port activities. Classification societies, such as Bureau Veritas, are responsible for the verification of containers damaged in transit to consignees. However they do not deal only in container verification but other activities like civil and environmental engineering building, international trade government contracts, environment, industry and safety and quality insurance. The marine section is a very small proportion of the total business and it was not easy to find an exact breakdown of the wage bill or the number of personnel involved solely in the marine division.

Ship chandling was also another industry which was not easily reachable. There are not many registered companies that act only as shipchandlers in Mauritius. There are several other small ones which work closely with the ship agents to provide them with their required commodities. For example Somatrans is owned by the IBL group and provides ship chandling services to all IBL-operated vessels. However they do not engage in marine work only, but also supply companies in other sectors, making it hard to find the exact amount dedicated to port-related operations. The ship chandlers are usually responsible for the supply of fresh fruit and vegetable and other foodstuffs to the vessels

calling at the port. The local companies are rather small and because the market is very competitive, they were rather reluctant to give out information.

4.2 An overview of the Directly Port-Related Industries.

An attempted summary of the port ancillary industries has been presented in Table 4.1 below. The figures are by no means exact and the firms enumerated is not complete. Nevertheless the major companies or sectors of these companies which have certain of their activities related to the port functions have been included. Table 4.1 reveals that there are approximately 155 establishments which are associated with the activities of the port. These establishments, whether in the private or public sector are the reasons for the creation of employment for 3030 people representing a wage bill of MR 600 million.

These figures are significant to a first round employment immediately linked to the port activities. The estimated expenditure on wages and salaries in these activities are probably conservative, and some of the figures revealed by responding firms should be treated as being undervalued. Some compensation details and bonuses were not disclosed by firms. Nevertheless if the figures are taken as given by the companies, the gross remuneration of MR 600 million represents an annual wage bill of MR200,000 per employee per year.

The figures displayed in Table 4.1 have to be treated with caution. There are several factors which need to be looked at when calculating the contribution of the port activities to the economy. Firstly these figures represent only directly port-related activities and

the wages and salaries of those establishments associated with them. However the contribution does not end here as there are multiplier effects on industries backwardly linked to the port activities. These wages and salaries represent a further injection in the national economy and has a multiplier effect to total income and output. The size of the local economy multiplier is determined by the consumption propensity of wage earners and the tax leakage factor. The bulk of the employees affected in the port related industries mostly fall in the middle to low income brackets. They may hence be associated with a rather high marginal propensity to consume and a relatively low effective tax rate. The Ministry of Finance often uses a multiplier of 2 when calculating the effect of an injection in the economy. For the purpose of this exercise a multiplier of 2 will also be used, a figure that is also broadly consistent with other port-related studies (Jones, 1997; Morison & Jensen, 1987).

Therefore the port of Port Louis generates some MR 600 million paid annually to persons in direct port employment. If a multiplier of 2 is used, then this would generate an increase in expenditure of some MR 1.2 billion annually all at 2000 prices. It must again be noted that these figures concern only those people and sectors which are directly concerned with the activities of the port as a means of transport interface between land and sea. It excludes the other economic activities which are done inland only performed by the exporters and importers.

Table 4.1

Establishments, employment and wages in Port Louis Harbour and its ancillary industries (all data at 2000 levels)			
Industry/Sector	**Number**	**Employment**	**Wage Bill (MR million)**
Mauritius Port Authority	1	370	110
Cargo Handling Corporation Ltd	1	980	356
Clearing and Forwarding Agents	80	800	65
Shipping Agents	42	120	9
Container Parks	3	160	20
Ship Repairers	1	80	8
Bunker Services	4	45	9
Port Operators	10	50[1]	ns
Road Haulage	5	200	17
Ship Chandlers	5	20	ns
Customs and Excise	1	100	ns
Verifiers	1	5	ns
Other sectors	1	100[1]	ns
Total	**>155**	**3030**	**MR ~594**

Source : "This Study"

1. The employment magnitudes shown in these cases should be seen as very rough estimates and should be interpreted with appropriate caution.

4.3 Indirectly port related economic activities.

The impact of the port on the Mauritian economy is not limited to the players whose jobs functions are directly related to the port activities. More than 98 per cent of Mauritian imports and exports pass through the port so it is rather logical that there will be many other activities that are indirectly related to the port.

There are no private terminals in Mauritius. All of the land is owned by the MPA and then rented to the different companies. The family of private companies who are situated on the land of the MPA are mainly the Bulk Sugar Terminal, Les Moulins de La Concorde, the Mauritius Chemical and Fertilizer Industry, Froids des Mascareignes cold storage, the Mauritius Portland Cement limited, Mauritius Bulk Bitumen Ltd, Ciment Ocean Indien (Kolos), the State Trading Corporation and Mauritius Oil refineries Limited. The role of some of these players in the port activities has been described previously. Each one of these companies has been contacted individually.

It was found that some of them use these premises as their processing plants and some of them use them as only storage parks. At the premises of Les Moulins de la Concorde for example, the offloading is done, the processing and re-bagging is done which is thereafter retailed to the public. The Froids des Mascareignes cold storage on the other hand, uses its premises as a storage park where the fish is only stored until it is distributed to local companies or exported to other countries. The Tuna Fish Canning Industry gets all its tuna coming through the port and then processed inland. The fish is then handled by the cold storage until transferred to the canning plant where it is processed. The canning plant is thus indirectly related to the port operations.

It was hence a dubious task to find out how many employees of a particular company are solely affected with the activities of the port. Since the activities of these companies are not purely port related, the employees could be doing several jobs especially in the

administration side. The operation side as well was also confusing as some of the activities of offloading were done by the CHCL.

Nevertheless only those companies mentioned above represent a major source of employment to the local economy with at least 1000 people with a wage bill close to MR 200 million. These companies are situated on the premises of the MPA and the highest cost that they have to incur with regards to the MPA is a license to operate in the port areas and a rental for land. The amount of rental collected by MPA amounted to MR 15 million for year 2000 and the levy charge to port operators was MR 8 million.

The companies cited above are by no means the full list of those companies which are indirectly to the port activities. Companies registered as "Importers and Exporters" also run their business on behalf of principals using the port. Gambling houses and other entertainment areas are also heavily dependent on port activity. What the study has tried to illustrate above, are only those companies which find their daily activities purely associated with the activities of cargo handling at the port. What happens to the cargo from the time it leaves the port premises was not concerned by the study and thus would be part of the indirectly port ancillary industries. It was mentioned above that more than 98 per cent of the imports and exports which are done in Mauritius are effected at the port. Thus an attempt to look at all the indirectly port activities would be too exhaustive.

The next part of the paper will look at the impact which a vessel has when calling at Port Louis. It would hence be possible to see the gain and incomes generated by a vessel

which stops at Port Louis and works a certain number of containers. Similarly it would be possible to see the total revenue lost by Port Louis if a vessel switches its patronage from Port Louis to another regional port.

Chapter V

5.0 The effects of a changing port traffic base on local economy.

The previous chapter has looked at the contribution to the local economy provided by the major port players. It represents employment to more than 3000 people with a wage bill of MR 600 million annually in first round of employment. The next part of the study will take a deeper look at the impact on the local economy brought by vessel callers at the port. In other words, the study will now look at the contribution to the local economy when a vessel calls at the port of Port Louis.

5.1 The problem statement.

The port activities are dominated by predominantly containerized, general, fish and tanker vessels which use Port Louis as a port call. Containerised vessels, however, dominate a major share of vessel traffic. This section will look at the impact on the local economy when an additional vessel is captured by the port. That is, *how much will the local economy benefits in terms of output, employment and expenditure gains if an additional vessel calls in at Port Louis?* Similarly the other side of the coin would be the losses incurred by the local economy if one vessel ceases to use Port Louis as a port call.

5.2 Research objectives.

This section will be of particular interest to the Mauritius Ports Authority. They have set up a New Container Terminal and now it would be necessary to know the contribution of an extra container vessel to the local economy when it calls at Port Louis. At the end of the study one would be able to see the additional benefits brought to the NCT by additional vessel calls. The figures can be used in financial studies to

see, for example, the payback period of the investment of the NCT, or for other financial studies. The containerized vessels represent the major type of vessels calling at Port Louis. It was previously shown that 369 vessels (representing close to 50% of the total vessels excluding fish) which call at Port Louis are containerized vessels. Thus it would be interesting to know how much does the call of one such vessel contribute to the local economy.

The other category of callers to be examined in this section is a transshipment caller – in effect, a hypothetical sub-category of container callers. Mauritius has lately been claiming itself as having a hub status and wants to develop its port as a transshipment port. There are mixed feelings in the port authorities claiming that the transshipment activities did not boost up as what they expected. In fact there are mixed feeling in the MPA as some people believes that Port Louis does not possess the required characteristics to develop itself as a transshipment port. Nevertheless, an increase in transshipment activities is part of the MPA's planning strategy. It would thus be interesting to know the contribution made by a transshipment vessel when it calls at Port Louis. The result of this study could then be used as a reference for further transshipment marketing and for additional investment to be done in the port arenas.

5.3 The methodology used.

The New Container Terminal has brought a lot of hopes to the mauritian maritime community. New and modern equipment has been purchased. There are three gantry cranes which have been set up and other modern equipment have been purchased so as Port Louis can meet the standard of other big ports of the world. The port, on its side, has been experiencing an increase in the volume of cargo handled. In the last few

years it was shown that the number of containerized vessels calling at the port has been falling while the number of containers itself has been rising. This has been explained by the fact that bigger vessels which come to Port Louis to work more boxes per vessel.

The increase in the volume of traffic does not only affect the port authorities. A series of other port ancillary industries are associated with the activities that occur at the port. The increase in the volume of traffic will also lead to an increase in their business activities. The stevedoring functions, warehousing, road haulage, container parks, the freight departments of the ships agencies and the documentation processing functions of the clearing and forwarding businesses will certainly benefit from the increase in traffic cargo. The larger volume of cargo certainly translates into more spending, more facilities and the creation of more jobs for the local economy.

This section will illustrate the additional activities that are created by additional cargo handled at Port Louis. The previous section has shown that more than 4 million tons of cargo is handled annually at Port Louis and this provides employment for more than 3000 persons. Thus very crudely it can be estimated that there is one job created for every 1300 tons of cargo handled. It is rather obvious that different cargo will have different impact on the level of personnel needed and hence the above figure must be interpreted with extreme caution. Containerised cargo is more capital intensive while conventional breakbulk cargo is more labour intensive. It would thus be rather absurd to use these figures to find out the marginal activity which is created with extra cargo handled. What this study will rather show, will be the additional spending that is injected in the local economy by carriers, terminal operators and other

port players when typical container and transshipment vessels perform activities at the port of Port Louis.

Much of the information was derived from the local ship agents, ship operators and the relevant parties. The study will look at the expenditure that could be generated when a vessel works 300 TEUs calls at a single call at Port Louis. The figure of 300 TEUs was chosen because it was stated in the port's handbook that the average number of TEUs per vessel call is 356 (Port News, Dec 2000). Other information was calculated form the revenue account of the Mauritius Port Authority and the Cargo Handling Corporation Limited books. The remainder of the parties involved were contacted to find out how much expenditure/revenue they would generate by handling the vessel. The results of the revenue and expenditure of the relevant parties are displayed in the following section.

5.4 Impact of changes in container traffic.

The average number of TEUs handled per vessel annually at Port Louis for the Financial Year 1998/1999 increased from 279 to 356 for the Financial Year 1999/2000 (Port News, Dec 2000). It was also stated previously that more than 95 per cent of the total number of containers which came to Mauritius, were handled at the New Container Terminal (Port News, Dec 2000). Thus for the purpose of this study the port tariffs applying to the NCT were used. Therefore the standard vessel call for a vessel used in this study would be a vessel which calls at Port Louis and works 300 TEUs at the NCT.

One important category of expenditure/cost which has been left out in this study is the ad valorem wharfage levied on the value of the cargo passing across the wharfside. This figure is in fact the single largest source of revenue for the MPA. But this revenue is then passed on to the coffers of the state and thus does not remain in the possession of the MPA. The other reason that it has been left out is the fact that it was difficult to find out how much wharfage would be generated with the handling of the containers. The wharfage is based on the value of the goods and it would be practically impossible to find the composition of 300 TEUs.

The results in the Table 5.1 below thus shows that when a vessel calls in at Port Louis and has to work 300 TEUs of Mauritian cargo, an injection of close to MR 5 million is generated in the local economy. However this exercise should be seen as an estimate of the revenue generated rather than as a true and exact figure. The figures are based on many assumptions and some firms engaged in port activities were omitted.

The repair industry was left out as most of the clients calling at the repair yards in Mauritius are fishing vessels. There are seldom repair works done on container vessels but most of the vessels prefer to go to a more sophisticated and bigger repair yard like the Durban harbour for their reparation. The local repair yard does not have the required facilities to accommodate big container vessels. The only works that could be done would be emergencies or reparation of broken containers. Thus the containerized vessels do not represent a big market for our local repair yard.

On the basis of the results from Table 5.1 below, it can be crudely said that approximately MR 5,195,000 is generated when a vessel calls at Port Louis and handles 300 TEUs. This represents an average of MR 23,000 per box. This figure depicts only a first round expenditure in the local economy as there are a lot other sectors which are associated with the activities of a vessel call. If the same multiplier of 2 which was used in the overall port activity is applied to this exercise then the total injection in the local economy would be in the region of MR 10 million. This figure does not take into account the revenue generated by the other indirectly port ancillary industries.

Table 5.1

Major categories of expenditure by a typical container vessel using the New Container Terminal at Port Louis, 2000 (tariff and cost levels)		
Items/Service	**Expenditure**	**%Total**
MPA marine services[1]	100,000	1.92
MPA container fees[2]	450,000	8.66
Cargo handling fees[3]	1,550,000	29.84
Road Haulage[4]	485,000	9.34
Container Park[5]	900,000	1.73
Clearing and Forwarding[6]	1,600,000	30.8
Bunker and Fuel[7]	720,000	13.86
Ship agents[8]	200,000	3.85
Total Expenditure	**5,195,000**	**100.00**

Source: "This Study"

Notes:

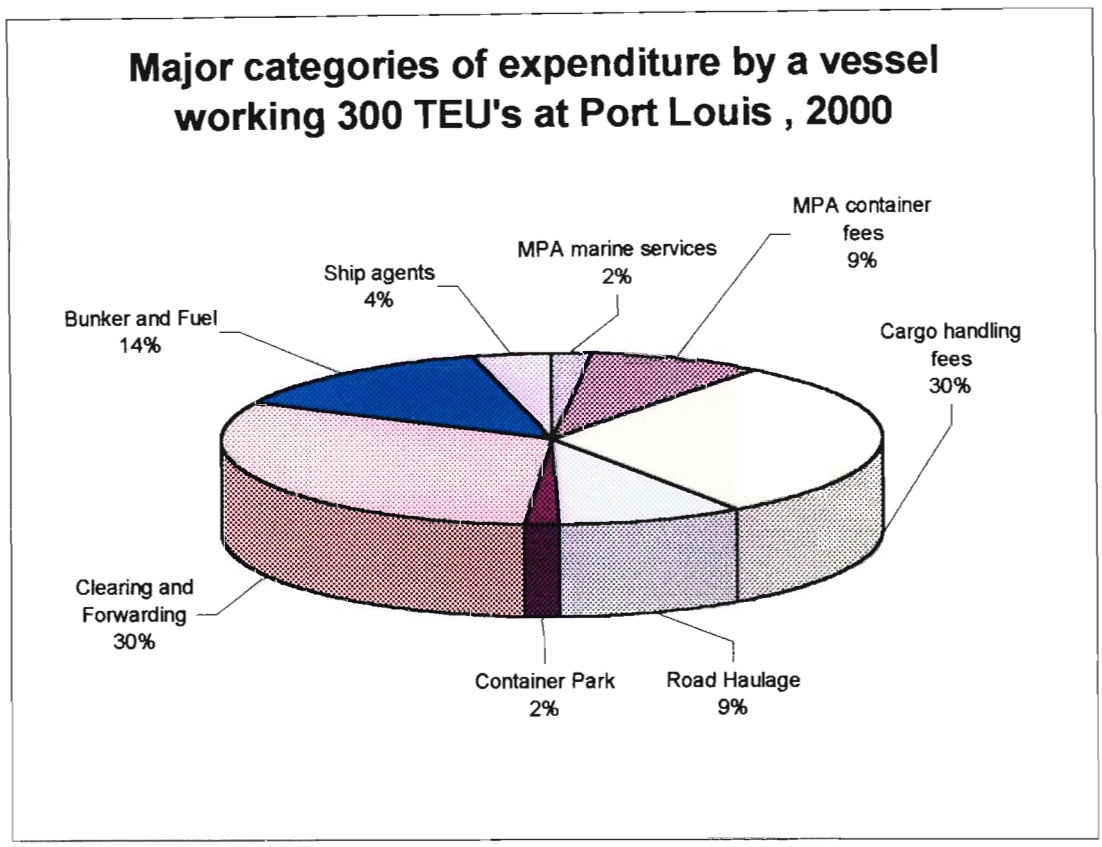
1. This figure include the pilotage, tug dues, port dues, dockage, scavenging and seamen's welfare. It would be a tedious exercise to find out the exact value of the marine services for 300 TEU's. Thus the figure was calculated on a pro-rata basis according to the total number of container vessels calling at Port

Louis, the total marine services fee incurred by the MPA, and the total number of containers which passed through the port.

2. The container fee is charged by the MPA for each container which passes over the quays of the port.
3. The cargo-handling fee consists of the stevedoring and lashing charges, the shore charges, cranes fees, trailer fees, and transfer fee to the storage park.
4. The road haulage fee consisted of the transfer charges for the 300 containers from the Terminal III container park to a private container park. It was assumed that all 300 TEUs were transported to the same location so as to facilitate the calculation.
5. The container park fee represents the charges for the storage of a container in a private park. The Cargo Handling Corporation Ltd allows 5 days of free storage. The figure was calculated on an annual average fee provided by the container park companies.
6. The clearing and forwarding fee represents the cost that a C&F house would charge for sorting out all the paper work on behalf of the consignee. This figure thus would include all documentation fees and it would be the responsibility of the C&F house to get the papers cleared out by the customs. The figure was then calculated for 300 TEUs all carrying the same product category.
7. The bunker and fuel prices were based on an estimate of US$240 per metric ton of marine fuel oil. The figure varies on a daily basis and the amount of bunker which a vessel takes, is very flexible. For this exercise it was assumed that a vessel would collect 100 metric tons of fuel before its next port call. The

ship agents' fee was mainly the freight commission in respect of 300 containers worked at the port.

Figure 5.1



Source: "This Study"

Figure 5.1 displays the cost/expenditure which is generated when 300 containers are handled at the port. It can be found that the bulk of the expenses accrue to the clearing and forwarding houses and the cargo handling fees. Each one of them represents almost 30 % of total expenditure. The next biggest expenditure would be the bunker and fuel with almost 14% of expenditure followed by the road haulage and container fees each with 9% of expenditure, ship agents 4% and then the marine services and container park with each of 2% of total expenditure. The figures are based on a series of assumptions set out above. Most of the tariffs set by the MPA are quoted in US$

and a conversion factor of 1US$ is equivalent to MR30 has been used for the purpose of this exercise.

This exercise reveals that the gains to the local economy from the attraction of additional container traffic are substantial. The assumptions set out in this study have been based on cargo traffic of 300 TEUs per vessel call. The Mauritius Port Authority is expecting a growth of 8-10% in the container traffic over the years to come (MPA port handbook, 2000). This can be translated in an increase of about 12000 to 15 000 containers per year representing an injection in the local economy of some MR 200 million to MR 250 million rupees annually.

It is important to note that the exercises carried out in this section and the economic benefits that have been identified, are largely independent of the ultimate destination of imported container cargo. The expenditure estimates, multipliers and the linkages relate solely to activities associated with the actual handling, husbandry and management of container vessels, and the physical handling, distribution and administration of their cargoes. Economic activity associated with cargo owners (importers and exporters) has been ignored. Therefore the multiplied repercussions that it might have on the indirect port ancillary industries are not accounted for.

5.5 Impact of changes in transshipment traffic.

Mauritius has embarked itself on a mission where it wants to expand Port Louis as a centre for transshipment cargo. The MPA together with the state believes that there are ample opportunities for Port Louis to act as a hub for other countries and islands of the region, despite doubts expressed by some as to whether Port Louis possesses

the key attributes to function as a viable transshipment base. For a port to be selected as a hub, it should:

- have a strategic location vis-à-vis multiple trade routes and desired markets
- charge market determined dues and tariffs
- be surrounded by a dynamic local economy which provides a balanced cargo baseload (except in the case of off-shore mega hubs)
- offer modern infrastructures encompassing berths of 900-1,100 or more feet
- possess at least three of four gantry cranes
- offer 40-50 acres per berth of container storage space and on-dock or contiguous railway connections
- have 14-15 metres of water depth
- require minimal transit time from sea to dock
- be served by competitive ocean feeder and inland transport services and
- be known for harmonious labour relations and productive workers (Concentration in liner shipping, www.eclac.cl).

From the above list of requirements it can be found that Port Louis does possess some of them and lacks in certain areas. Nevertheless how far Mauritius can go in order to establish itself as a transshipment centre is difficult to predict.

The purpose of this section is to find out the level of economic activity which is generated by the handling of a transshipment vessel at Port Louis. Transshipment is done on a containerized level as well as in general cargo, vehicles, fish and bulk cargo. However this study will restrict itself to containerized cargo. Since there is no vessel which calls in at Port Louis with solely transshipment cargo, the paper will then

assume a vessel which calls in at Port Louis to offload 100 TEUs destined for transshipment to other regions.

The exercise will be simulated like the container vessel exercise set out above. This time there will be no clearing and forwarding and road haulage involvement. The CHCL offers 14 days free container storage from the time the transshipment cargo is offloaded from the vessel. This offer is only valid for transshipment cargo. So the exercise will assume that the cargoes are reloaded before the expiry of the 14 'free' days are completed. Thus there will be no fee for container parks as the container will be left at CHCL yard and collected before the expiry days. The main areas of revenue/expenditure which is generated from transshipment activities will be restricted to the MPA, the CHCL, and the bunker industry.

The MPA offers a 30 per cent discount to all transshipment vessels on all its marine services and it does not charge a quay fee on transshipment cargo. If the marine services are 30 per cent less than the purely containerized vessel in the previous study then the marine dues will be in the region of MR 70,000. The CHCL gets the lion's share of the expenditure which is around MR 500,000 for the loading and offloading of 100 transshipment TEUs. The bunker and fuel will be assumed to be one third of the previous exercise and will round up to MR 240,000. This figure is a pure estimate as it is evident that a vessel carrying fewer containers does not use proportionately lesser bunker fuel. The ship agent's fees could also be one third of the previous exercise and close to MR 70,000. The total injection in the local economy of working 100 TEUs in the Port Louis total approximately MR 880,000 in first round expenditure as shown in Table 5.2 below.

Table 5.2

Major categories of expenditure by a typical transshipment vessel using the New Container Terminal at Port Louis, 2000 (tariff and cost levels)		
Items/Service	**Expenditure**	**%Total**
MPA marine services	70,000	7.95
Cargo handling fees	500,000	56.82
Bunker and Fuel	240,000	27.27
Ship agents	70,000	7.95
Total Expenditure	**880,000**	**100.00**

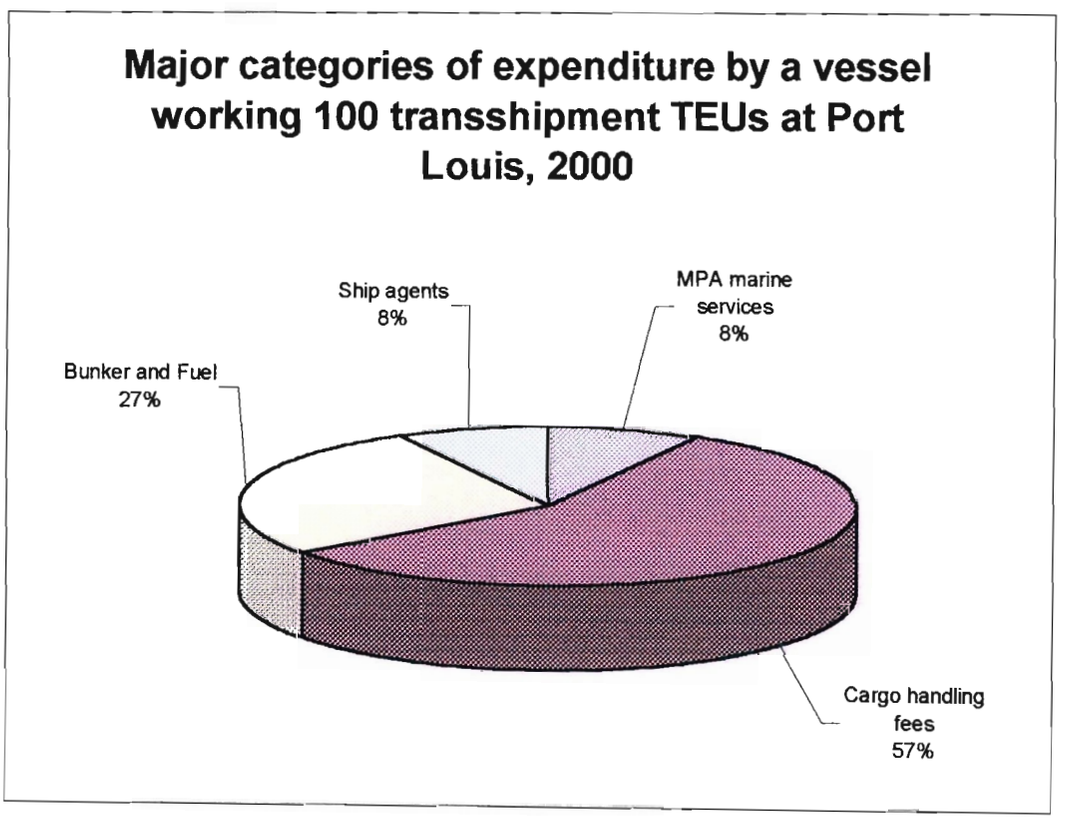
Source: "This Study"

If the same multiplier of 2 is used as in the previous exercise then the total expenditure will be approximately MR 1.7 million. Using simple arithmetic, it can be deduced that since Mauritius earns MR 5,195,000 when a vessel works 300 national TEUs at the port, this is equivalent to MR 17,310 earned per TEU of national containerized cargo. If the same methodology is applied, then the MR 880,000 earned from working 100 transshipment containers represents MR 8,800 per container. Hence it can be concluded that the earnings flow when Port Louis works a container of national cargo is twice that of a transshipment container. However the comparison done above was solely for analytical purposes and should not be used as definite results. It should be treated with caution as it entails many assumptions.

Nevertheless the call of a transshipment vessel represents a potential source of earnings for the country and should not be neglected. Mauritius already possesses some characteristics of a hub port and it could very well exploit that in order to

benefit from the transshipment activities. In fact it is very common to see vessels calling at the port with both national cargo and transshipment cargo. If that is the case then the revenue earned from the transshipment cargo will run alongside the revenue derived from working the national cargo. Hence in order to benefit from the revenue of transshipment cargo, Mauritius has to exploit its hub potential. The following Figure 5.2 displays the spending of a transshipment vessel at its call in Port Louis.

Figure 5.2



Source: "This Study"

In the absence of road haulage charges, container park fees and clearing and forwarding fees that were present in the case of national cargo vessel, cargo-handling charges represent the biggest share of the pie. This is because the containers do not enter the national economy; they are stored for free for a certain number of days and there is no additional charges are incurred. Thus the only big expenditure is practically the loading and offloading of containers from and onto the vessels. It

represents approximately 57% of the expenditure followed by bunker and fuel (27%), marine services (8%) and ship agents fee (8%). The immediate beneficiaries are consequently the port authority, the terminal operators and service providers to the carrying lines.

The state and all other sectors involved in the port community can use the above statistics to decide whether it is worthwhile to persist in transforming Port Louis as a transshipment centre for the Indian Ocean. They may use these estimates figure as budgeted figures to see what they would earn when an extra vessel calls at Port Louis. It would be a good piece of statistics as it will help to calculate the revenue which can be earned by a vessel who works both national cargo and transshipment cargo.

It must however be noted that the revenue earned when a vessel calls at Port Louis is divided among several parties and that the MPA is not the sole beneficiary. Also there are quite a few assumptions underlying the above exercise and hence the figures must be interpreted with caution. There will also be a chain of indirectly port players who will also enjoy the benefits of a vessel calling at Port Louis and the state must also take them into consideration.

This section has looked at the different benefits that accrue to the Mauritian economy when a typical container vessel calls at Port Louis. The exercise was repeated for a transshipment vessel and it was found that the gains are rather considerable. The state and other port authorities can now see the earnings which they will lose if one vessel decides to forgo Port Louis as a port call. At the same time they can use these figures

in their future investment project as they can have an idea of the expected revenue to the local economy.

Chapter VI

6.0 Conclusion

The Port Louis harbour is presently one of the major ports of the Indian Ocean. It has proven itself over the past few years where it offers services which makes it a potential competitor to other ports of the region. The Mauritius Ports Authority has invested heavily in the port and they do not intend to stay with their arms folded. They are continuously undertaking major research and marketing campaigns so that additional traffic can be brought to the port. The Mauritius Ports Authority is working in close collaboration with the Mauritius Freeport Authority and the Cargo Handling Corporation Limited so that it can intensify its foothold in the region.

Mauritius is part of the Southern African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA). This represents a good opportunity for other countries to do their business via Mauritius in order to benefit from all the advantages associated with these organizations. The increase in the traffic which transits at Port Louis is proof that the port is well regarded in the eyes of the foreign maritime community. This has resulted in an increase in the total harbour tonnage, increase in the number of containers, and an increase in the number of vessels which comes to Port Louis.

The above study has shown that the benefits which accrue when a vessel calls at Port Louis represent a significant injection in the local economy. The Mauritian maritime community provides employment to more than 3000 people in direct first round employment representing an annual wage bill of some MR 600 million. The study has

also shown that more than MR 5 million is generated when a vessel works 300 TEUs in the port and that close to MR 900, 000 is generated when a vessel handles 100 transshipment TEUs at Port Louis, all in 2000 prices.

This paper has started by giving an overview of the different terminals which are situated in the port premises. It has laid particular emphasis on the New Container Terminal which is the newest terminal in the port. The major investment in infrastructure which took place there has transformed Port Louis equal to other ports in the region and is also expected to bring in positive returns to the port.

Chapter III is concerned with the traffic performance at the port. It has looked at the different cargo handled and the major components of imports and exports cargo. It has shown that there has been an increase in the total harbour tonnage, container movements and number of vessels which visits the port.

Chapter IV is the first round of the major piece of research undertaken in this study. It concerns the number of people who are employed due to the activities which takes place at the port. It has looked at all the port players that are involved in both the vessel related activities and the cargo related activities. Then the study went deeply in analyzing the main players in the port. The number of employees in the port related activities were collected together with their associated wage bills. The results were tabulated and consequently represented the contribution to the local economy due to the ports activities.

Chapter V is the second part of the research undertaken in this study. It looked at the injection to the local economy if an additional vessel would call at Port Louis. The latter represented the problem statement and the research objectives together with the methodology used were stated. It was shown that a vessel working with 300 TEUs at Port Louis represented an expenditure gain of more than MR 5 million for the local economy. The study was then simulated for a vessel working 100 transshipment TEUs. This resulted in an injection in the order of close to MR 900, 000 for the economy.

Chapter VI is the conclusion of the study and following that is the list of persons contacted in the study, the references and bibliography.

The above study can be of major importance to the overall maritime community of Mauritius and abroad. Despite the major assumptions which were used in the study, the Mauritius Ports Authority will be the most concerned as it can use the results of the research to predict future probable returns on investment. The State will find it useful when it comes to finding out the injection to the economy and the outside world will be able to have a global idea of the activities which takes place at Port Louis.

7.0 List of Tables

8.0 List of Figures

9.0 List of Persons interviewed during this study

Names of Person	Affiliation
Dany Sooben	Ireland Blyth Group
Patrick Chung	Caltex
Michelle Wong Min	Shell
Felicite Domaingue	State Trading Corporation
Philipe Lam Loong In	Mauritius Port Authority
Giblot Andre	Cargo Express
Prakash Sampath	Mauritius Port Authority
Lallchand Teeloku	Mauritius Port Authority
Daniel Ng	Cargo Express
Narain Ramanah	Bulk Sugar Terminal
Pierre Foster	Cargo Handling Corporation Ltd
Patrick Tranquille	Mauritius Chemical and Fertilizer Industry
Pierre Richard Andre	Mauritius Chemical and Fertilizer Industry
Roger Fanor	Cargo Handling Corporation Ltd
Pravin Deven	Marine Transport Location Limited
Shiam Ramkisson	Associated Container Services Limited
Gilbert Squelbeck	Marine Transport Location Limited
Stephan Noel	Compagnie des Tranport Commerciaux
Denis Chung	Caltex
Prettie Bunwharee	Mauritius Port Authority
Capt Rene Sanson	Rogers & Co. Ltd

Affiliations are correct at the time when persons were interviewed, generally in March – April 2001.

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