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**PROJECT PERFORMANCE ASSESSMENT REPORT**

**MAURITIUS**

**PORT DEVELOPMENT AND ENVIRONMENTAL PROTECTION PROJECT  
(LOANS SCL-3908 AND SCL-3909)**

**November 29, 2005**

*Sector, Thematic, and Global Evaluation Division  
Independent Evaluation Group*

## Currency Equivalents (annual averages)

Currency Unit = Mauritian Rupees (Rs)

1995	US\$1.00	Rs17.67
1996	US\$1.00	Rs18.56
1997	US\$1.00	Rs20.27
1998	US\$1.00	Rs22.55
1999	US\$1.00	Rs24.79
2000	US\$1.00	Rs25.48
2001	US\$1.00	Rs27.68
2002	US\$1.00	Rs30.28
2003	US\$1.00	Rs28.83
2004	US\$1.00	Rs27.73
2005	US\$1.00	Rs28.91

## Abbreviations and Acronyms

BOT	Board of Trade
BPML	Business Parks of Mauritius Ltd
CAS	Country Assistance Strategy
CHCL	Cargo Handling Corporation Ltd
EIB	European Investment Bank
IBRD	International Bank for Reconstruction and Development
ICR	Implementation Completion Report
Jexim	Japan Export-Import Bank
LIBOR	London inter bank offered rate
MCT	Mauritius Container Terminal
MPA	Mauritius Ports Authority
MMA	Mauritius Marine Authority
MFA	Mauritius Freeport Authority
IEG	Independent Evaluation Group
PPAR	Project Performance Assessment Report
PSEC	Port Safety and Environment Committee
PUC	Port Users Council
QAG	Quality Assurance Group
SCL	Single Currency Loan
TEU	Twenty foot container equivalent

## Fiscal Year

Government: July 1 to June 30

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**IEG Mission: Enhancing development effectiveness through excellence and independence in evaluation.**

### About this Report

The Independent Evaluation Group assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEG annually assesses about 25 percent of the Bank's lending operations. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons. The projects, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by IEG. To prepare PPARs, IEG staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader IEG studies.

Each PPAR is subject to a peer review process and IEG management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

### About the IEG Rating System

The time-tested evaluation methods used by IEG are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. IEG evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (more information is available on the IEG website: <http://worldbank.org/oed>).

**Relevance of Objectives:** The extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). *Possible ratings:* High, Substantial, Modest, Negligible.

**Efficacy:** The extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Possible ratings:* High, Substantial, Modest, Negligible.

**Efficiency:** The extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. *Possible ratings:* High, Substantial, Modest, Negligible. This rating is not generally applied to adjustment operations.

**Sustainability:** The resilience to risk of net benefits flows over time. *Possible ratings:* Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

**Institutional Development Impact:** The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible.

**Outcome:** The extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Bank Performance:** The extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project). *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

**Borrower Performance:** The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, towards the achievement of development objectives and sustainability. *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.



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## Principal Ratings

	<i>ICR*</i>	<i>ES*</i>	<i>PPAR</i>
Outcome	Highly Satisfactory	Highly Satisfactory	Highly Satisfactory
Sustainability	Highly Likely	Highly Likely	Likely
Institutional Development Impact	Substantial	Substantial	Substantial
Bank Performance	Satisfactory	Satisfactory	Highly Satisfactory
Borrower Performance	Highly Satisfactory	Highly Satisfactory	Highly Satisfactory

\* The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The Evaluation Summary (ES) is an intermediate IEG product that seeks to independently verify the findings of the ICR.

## Key Staff Responsible

<i>Project</i>	<i>Task Manager/Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
Appraisal	Alain Ballereau	Maryvonne Plessis- Fraissard	Andrew Rogerson
Completion	Marc Juhel	Maryvonne Plessis- Fraissard	Hafez Ghanem





## Preface

This is the Project Performance Assessment Report (PPAR) prepared by IEG for the Mauritius *Port Development and Environmental Protection Project*. Two single-currency dollar-based loans were approved by the Board of Directors on June 20, 1995, with a total value of US\$30.5 million. The first (Loan 3909-MAS) for US\$23.4 million, was to the Mauritius Marine Authority (MMA) for civil works and technical assistance. The second (Loan 3908-MAS) was to the Republic of Mauritius in the amount of US\$7.1 million for on-lending to the Mauritius Freeport Authority (MFA) and to cover a grant to MMA and the Directorate of Shipping to improve conditions for marine environment protection and the control of vessel safety. Both loans were made effective as planned on March 4, 1996.

There was also significant project cofinancing support. The Japan Export-Import Bank (Jexim) financed an equivalent amount to the Bank loan for the new container terminal (US\$23.4 million), while the European Investment Bank (EIB) approved a loan (US\$19.7 million) to finance ship-to-shore container handling equipment for the new terminal. The Government of Luxembourg also participated and provided a grant for the building of new warehouses (US\$1.0 million).

The final project cost was US\$70.0 million, which was lower than expected compared with the appraisal estimate of US\$100.2 million. The difference was mainly due to competitive bids received for civil works, appreciation of the U.S. dollar against the French Franc during the implementation of the civil works contract for the container terminal, and a reduced scope of work for the oil berth.

At the request of the Ministry of Finance for Mauritius, an undisbursed amount of US1.4 million was cancelled from Loan 3908-MAS on December 14, 2001. Two amounts were cancelled from Loan 3909-MAS, US\$7.0 million on July 1, 1999, and US\$1.0 million as of August 1, 2001.

IEG prepared this report based on an examination of the relevant Appraisal Report, Implementation Completion Report (ICR), legal agreements, project files and archives, as well as other relevant reports, memoranda, and working papers. In addition, the project was discussed with relevant current and former Bank staff in Washington, D.C., as well as in Mauritius. An IEG mission visited Mauritius in April 2005, conducted site visits and discussed both the project and the effectiveness of Bank assistance with relevant officials and stakeholders. Their kind and helpful assistance is greatly appreciated.

Following standard IEG procedures, copies of the PPAR was sent to relevant government officials and agencies and comments have been included as Annex C to this report.



## Summary

The *Mauritius Port Development and Environment Protection Project* was approved by the Bank in 1995 and was completed on schedule in 2001. It was conceived in the context of the Mauritian Government's policy on economic development and the Bank's 1994 and 1997 Country Assistance Strategies (CAS), which aimed to help Mauritius achieve and sustain a higher level of economic performance through increased competitiveness and diversification of production and exports, as well as the development of skills-intensive and service-based activities. This strategy was reliant, *inter alia*, on improving the efficiency and competitiveness of key infrastructure, including the country's main port. The final project cost was US\$70 million and was cofinanced by the Japan Export-Import Bank (Jexim), the European Investment Bank (EIB), and the Government of Luxembourg.

The overall objective of the project was to enhance Mauritius' transport and trade competitiveness in the maritime sector in an environmentally sound manner. This was to be achieved through:

- Increasing port productivity, efficiency, and capacity to meet the demand of port users and operators at competitive rates through the extension of facilities, mechanization, and improved management of the Mauritius Port Authority (MPA), the Cargo Handling Corporation Ltd, and the Mauritius Freeport Authority (MFA);
- Redefining the role of MPA as a landlord port authority working through a system of competitive concession contracts with performance indicators for port operations;
- Supporting the development of MFA to promote Mauritius as an attractive tax-free base for regional *entrepôt* trade; and
- Accompanying port development with sound environmental protection, including control of marine pollution, as well as port operations and vessels' safety enhancement.

To accomplish these goals transport costs were to be lowered through reduced ship and cargo waiting time, land use would be improved - in particular for prime areas reclaimed from the sea, and the needs of private investors and operators would be addressed through strengthened regulatory roles and organization of the port authorities. Environmental risks would be reduced through less polluted port water, improved handling of hazardous cargo, and better ship safety control.

The outcome of the project is rated **highly satisfactory**; all four objectives were achieved in full and well within budget. Port productivity improved substantially and the cargo volume handled grew dramatically. This generated economic benefits and boosted transshipment operations for the port. Following the promulgation of a new Ports Act, the Mauritius Port Authority's role was redefined as the regulator and landlord of the port, and the Mauritius Freeport Authority was also strengthened. Sound environmental protection measures, such as safeguarding against marine pollution from oil spillages and ships' waste were also introduced in the port.

Institutional development is rated **substantial**, especially in view of the solid legislative and institutional reforms, accompanied by enhanced staffing skills and

innovative participatory interaction with the trade unions and other stakeholders. The success of the project is in part also due to the excellence of the participatory approach and broad consultation process. There were substantial social implications arising from the new institutional framework with implications both for employment and conditions of service. Bringing in the trade union at an early stage helped to overcome potential misunderstandings and created a mutually supportive instead of a confrontational situation. Because of the large number of stakeholders the participative approach to the Master Study Plan and the creation of the Port Users' Council were very helpful and led to general agreement on the way forward.

Sustainability is rated **likely**, rather than highly likely, since continued growth depends on further expansion and further urgent investment decisions if the momentum is to be maintained. Linked to this conclusion a further urgent and propitious course of action would be to bring in a second port operations company to introduce a more competitive situation to improve productivity further. The recent loss of the traffic of a major transshipment operator is a warning sign that the port needs to move quickly on these matters to elevate its performance to an even higher level in keeping with the demands of the market.

Both Bank and borrower performance are rated **highly satisfactory**. In the former case the rating has improved over the ICR rating in recognition of the exemplary encouragement of a participatory approach to sector reform and outstanding financial advice and technical support. Borrower performance reflects the high level of commitment and enthusiasm as well as the professional quality of both the government officials and implementing agencies' staff. Monitoring indicators proved to be very effective in adjusting both strategy and productivity to changes in market demand. Perhaps the only negative note is the losses incurred on foreign exchange transactions, which have since resulted in the introduction of new hedging instruments by the port authorities.

The following lessons may be drawn from the experience of this project:

- *Key factors for a successful infrastructure port reform project are strong commitment from government, consistency of political will even when administrations change, and an inclusive participatory approach with a broad consultation process.*
- *A good monitoring indicator system can help a port operator to adapt both its operating strategy and productivity level quickly when it needs to respond to changes in market demand.*

- Once a port has proved to be commercially successful, *private sector investment* should be a strong option for any future development, since its viability will encourage potential investors to *take on the risks involved*. *The participation of the private sector usually also ensures a speedier response to changing market conditions.*

Vinod Thomas  
Director-General  
Evaluation



## 1. Background

1.1 Mauritius is a small island, some 2,040 square kilometers in extent, located about 800 kilometers east of Madagascar in the Indian Ocean. Its maritime, subtropical climate, volcanic mountains, lagoons, and sandy beaches have been conducive to the development of a thriving tourist industry, attracting some 700,000 visitors annually. In addition, sugar production, light industries including clothing manufacturing, and financial services contribute significantly to the economic base. More recent developments have been the establishment of a free trade zone and a plan for Mauritius to become a “cyber” island through investment in information technology. This is slowly becoming a reality and the country now aspires to be the world’s first nation with “coast-to-coast” wireless internet coverage.<sup>1</sup> Mauritius has a competitive economy, enjoys political stability through a multi-party democracy, and its GDP growth has averaged 4.7 percent annually during the period 2000-04.<sup>2</sup>

1.2 The island’s 1.2 million inhabitants are relatively urbanized, with a high population density of 590 people per square kilometer. Annual per capita income is about US\$3,830, thus outperforming most economies on the African continent. The nation’s environment and topography, however, pose special challenges for the development of transportation. While significant investments have been made in the harbor at Port Louis and the international airport, road transport has tended to lag behind and the capital now experiences serious peak-hour traffic congestion, which is to be addressed in another project in the near future.<sup>3</sup> The Bank has contributed to the upgrading of the port facilities through a port modernization and extension project in 1974, which financed the construction of three deep-water berths completed in 1983, and through the project under review in this PPAR, the *Mauritius Port Development and Environmental Protection Project*. Currently the port has twelve berths, handles five million metric tons of cargo and 240,000 twenty foot container equivalents (TEU) annually.

1.3 This project was approved in June 1995, became effective in March 1996, and was completed on schedule in December 2001. It was conceived in the context of the Mauritian Government’s policy and the Bank’s Country Assistance Strategy (CAS) for Mauritius. To help the country to achieve and sustain a higher level of economic performance based on increased competitiveness and diversification of production and exports, it included the development of skills-intensive and service-based activities. A key component of this strategy was to improve the efficiency and competitiveness of key infrastructure, including the main port. Such improvements were to be undertaken in an environmentally sound manner, especially as it was vital to preserve the country’s scenic beauty – one of its major assets – from potential pollution from port activities.

1.4 The project was cofinanced by the Japan Export-Import Bank (Jexim), the European Investment Bank (EIB), and the Government of Luxembourg. Several benefits were envisioned in the project concept. These included developing an international and

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1. Article reported in the *Chicago Tribune*, June 19, 2005.

2. Economist Intelligence Unit, Country Report, February 2005.

3. *Mauritius Transport Action Plan and Public Expenditure Review*, Report 26148-MAS, June 16, 2003, World Bank, Washington D.C.

regional *entrepôt*<sup>4</sup> trade by improving both the harbor and Freeport facilities; lowering transport costs through reduced ship and cargo waiting time; better land use, in particular for prime areas reclaimed from the sea; better response to the needs of private investors and operators by strengthening both the regulatory roles and organization of the port authorities; and reduced environmental risks through less-polluted port water, improved handling of hazardous cargo and ship safety control. Overall, the project was expected to have a substantial positive impact on the island's people through the generation of new business, employment, and trade opportunities.

## 2. The Project

### Project Objectives

2.1 The overall objective of the project was to enhance Mauritius' transport and trade competitiveness in the maritime sector in an environmentally sound manner. To this end four specific objectives were formulated, and these have remained unchanged since project appraisal:

- To increase port productivity, efficiency, and capacity to meet the demand of port users and operators at competitive rates through the extension of facilities, mechanization, and improved management of the Mauritius Port Authority (MPA), formerly the Mauritius Marine Authority (MMA), the Cargo Handling Corporation Ltd (CHCL), and the Mauritius Freeport Authority (MFA).
- To redefine the role of MPA as a landlord port authority working through a system of competitive concession contracts with performance indicators for port operations.
- To support the development of MFA to promote Mauritius as an attractive tax-free base for regional *entrepôt* trade.
- To accompany port development with sound environmental protection, including control of marine pollution, as well as port operations and vessels' safety enhancement.

2.2 These objectives were clearly formulated, and were in line with the Bank's 1994 and 1997 CAS's as well the policy of the Mauritian Government. One pillar of the Bank strategy was to improve the efficiency and competitiveness of key infrastructure in an environmentally sound manner. By supporting and guiding the modernization and extension of the port, the project strengthened the nation's goal to reach a higher level of economic performance. In addition, the environmental component was significant for its potential demonstration value for other countries in the area of marine pollution prevention and vessel safety control.

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4. *Entrepôt* - center for intermediary trade and transshipment, goods in such centers are often free of duty if re-exported.



## Project Components

2.3 The project had three components as detailed in Box 1 below. There is a good fit between the components and the objectives and no component was revised during the implementation of the project. Port Louis Harbor is the general name given to the entire port area. The new container terminal forms part of this harbor. The Freeport is a duty-free zone where all goods imported, stored and processed prior to re-export are exempted from import duties. It occupies 45 hectares of land in proximity to the container terminal.

### **Box 1: Mauritius Port Development and Environmental Protection Project, Components and Costs (US\$ millions).**

**Port Development** (Appraisal cost US\$89.3 million; actual cost US\$63.6 million)

- Institutional strengthening to make MMA a more commercially orientated landlord port authority
- Improvement in the management and operations of MMA and CHCL through the implementation of their corporate plans, including organizational restructuring
- Construction of a new three-berth container and oil terminal, and procurement of related equipment as well as a passenger terminal building and an internal road network for the new port areas
- Supervision contracts for civil works and specialized short-term assistance to develop and implement actions needed to strengthen the institutional setup, management, and operations of MMA and training.

**Freeport Development** (Appraisal US\$8.9 million; actual US\$6.0 million)

- A study on the modalities for liberalization of the national regime governing air transport licensing, to permit sea-air links
- Implementation of a targeted trade development strategy
- Construction of roads, offices, and customs buildings
- Supervision contracts for civil works, and specialized short-term assistance to develop and implement actions needed to strengthen management, operations, and training at MFA.

**Environmental Protection** (Appraisal US\$2.0 million; actual US\$0.4 million)

- A study to define the requirements and to design facilities for collection and disposal of land and ship-based oily waste, and to draft regulations required to enforce safety in port operations and control vessels' sea-worthiness.
- Construction of facilities to collect and pre-treat oily waste
- Supervision of contracts for civil works and equipment and training to fight oil spills.

## Implementation Issues

### *Quality at Entry*

2.4 The project design predated the existence of the Quality Assurance Group, so no separate assessment was made of the project quality at entry. However, the project

implementation completion report found the quality at entry to be satisfactory. The project objectives were consistent with government priorities and addressed the most critical need in the transport sector at the time. Lessons from earlier projects in Mauritius were taken into account and there was evidence of substantial government commitment to proceed with sector reform. This PPAR mission concurs with this view and believes that a very positive factor was the participatory approach right from the start that involved the port trade unions as well as plans for regular consultation with the private sector.

2.5 Perhaps the only area in which the Bank took a risk was by not formally linking the approval of disbursements with progress in sector reform. However, the Bank decided to finance the container terminal without conditions in the light of the commitment indicated in a formal Letter of Government Policy as well as the substantial climate of trust and confidence built upon the past credentials of the country, which had a very positive record. In the event, this confidence was not misplaced.

### ***Financing Arrangements***

2.6 The Bank financing arrangements were considered innovative for Africa at the time of appraisal and the single-currency (U.S. dollar-based) loans (SCL) at the Bank's LIBOR-based<sup>5</sup> variable lending rate appeared attractive to the borrower. Two loans were necessary because of the different responsibility areas, but the loans were clearly for one integrated project with common objectives. The SCLs, with a 15-year maturity, gave a better spread for the annual financing costs than any alternative financing option at the time. Similar terms were secured from the project's co-financiers, while private sector equity financing reduced reliance on debt financing. However, in the event, the dollar appreciated much more strongly than expected, by an average annual rate of 8 percent against the Mauritian Rupee between 1996 and 2001, leading to losses for MPA associated with these foreign exchange fluctuations. MPA decided to partially repay US\$10 million of the loan<sup>6</sup> earlier than originally planned and has since introduced an improved strategy to better manage its debt servicing requirements. Although normal risks had been recognized up-front and the volatility issue had been discussed in the memorandum on the loan presented to the Board of Directors, it would have been unreasonable to have expected the parties to anticipate the extent of the Asian financial crisis and the unexpected difficulties in buying US dollars on the local Mauritian market to hedge against exchange rate variations.

### ***Capacity to Deal with Legal Matters***

2.7 It became apparent that MPA lacked sufficient support to deal with legal matters on sector reforms because it had to rely on the State Law Offices for legal advice. This led to delays because these offices had numerous competing priorities. However, the matter was resolved by the provision of legal advice under project-financed technical assistance, in particular for the drafting of a new Ports Act and related regulations.

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5. LIBOR – London inter bank offered rate.

6. Loan IRBD 39090. World Bank Client Connection, loan overview.

### 3. Results

*Objective 1: To increase port productivity, efficiency, and capacity to meet the demand of port users and operators at competitive rates through the extension of facilities, mechanization, and improved management of the relevant authorities. **Highly achieved.***

3.1 The development of the new container terminal at Mer Rouge, a site on land reclaimed from the sea, has significantly increased the capacity of the harbor at Port Louis, which had limitations in respect of the draft and length of vessels that could be accommodated as well as its ability to handle the growing demand for containerized traffic. The new specialized terminal consists of three berths with a total length of 560 meters and a dredged depth of 13.1 meters, quayside gantry cranes, and a container park with associated facilities, equipment and supporting road infrastructure. Although the terminal occasionally experiences large waves due to cyclonic conditions, in practice, operations are disrupted on average by no more than 10 days annually.

3.2 In calendar year 1994 the MPA handled 86,504 containers. When the Mauritius Container Terminal (MCT) commenced operations on January 15, 1999, the number of containers handled annually by the port had already grown to 119,970 (a growth of over five percent per annum). After the new facility was opened the number of containers grew much more rapidly to 227,160 by 2004 (an increase of over 13 percent per annum), revealing a significant latent demand for container services. MCT also exhibited a trend toward handling larger containers; 40-foot containers represented 14 percent of all containers in 1998, but by 2004 this figure had doubled to 28 percent. (See Tables B1 and B2, Annex B).

3.3 The number of containers handled by the Mauritius Freeport Authority (MFA) grew from 2,036 to 3,022 (over 12 percent per annum) during the same period, indicating an increased demand for *entrepôt* facilities. (See Table B3, Annex B.) A similar pattern emerges if the traffic is expressed in twenty-foot equivalent units (TEU) for the period covering fiscal 1998/99 to fiscal 2003/04, a growth of 16 percent per annum. (See Table B4, Annex B.) The number of vessels handled by MCT grew from 386 in 1999 to 632 in 2003 (an increase of 64 percent). Mauritius also experienced strong growth in the value of its trading account and in its economy as a whole during this period.

3.4 After the opening of the MCT operational performance improved significantly and the average number of moves per gross crane hour rose from 14.4 in 1999 to 15.7 in 2003. Similar improvements can be observed from Table 1 for moves per ship working hour and moves per ship hour at berth. If only the larger vessels had been included, ship productivity would have reached 40 moves per hour, the international standard for competitive service at large ports. The success of the strategy to establish Mauritius as a regional logistics platform by attracting transshipment operations exceeded expectations and by 2003 pre-berthing delays were being experienced due to the unprecedented volume of traffic and problems experienced after one of the cranes was damaged in an accident. This accelerated the introduction of measures to maximize the use of the berths and plans for further expansion were viewed with greater urgency. The issue of the need for additional capacity is further addressed under the sustainability section (paragraphs 4.9-4.13).

**Table 1: Productivity in the Mauritius Container Terminal**

Year	Ships (Number)	Moves per gross crane hr.	Moves per ship work. hr.	Moves per hour at berth
1999	386	14.4	16.5	13.7
2000	429	17.8	24.2	17.3
2001	505	18.4	26.2	18.1
2002	575	17.6	24.3	18.0
2003	632	15.7	22.3	19.2
2004	556	15.3	22.8	20.8

Source: Mauritius Ports Authority.

3.5 The project led to significant improvements in the management efficiency of port operations, the Cargo Handling Corporation (CHCL) was established to carry out such operations and on June 1, 1997 a concession contract became effective. This was a key event in the modernization of the port and was the result of nine months of discussions between MPA, CHCL, and the unions. The concession introduced new working hours, enhanced operational flexibility, a new competitive tariff structure, and a clear commitment to achieve measurable minimum productivity targets. A new salary structure for MPA staff also was implemented, which linked a pay increase to a performance management system. With the support of a grant from the European Union a Port and Maritime Training Center was established in June 2001. This center could be expanded to cater for broader national training needs. In addition, the Port Master Plan was updated to cover the period to 2025 and recommended phased expansion of not only the container terminal but also facilities for passenger liners, oil tankers, and fishing vessels.<sup>7</sup>

*Objective 2: To redefine the role of MPA as a landlord port authority working through a system of competitive concession contracts with performance indicators for port operations. **Highly achieved.***

3.6 A new Ports Act was enacted on August 1, 1998, whereby MMA (which had been renamed MPA) become the regulator and landlord of the port, and subsequently awarded a concession contract to CHCL, which became the authorized operator whose activities and performance would be monitored by MPA. Yard handling equipment was sold by MPA to CHCL in accordance with the provisions of the Ports Act. Complementary to the new legislation revised port regulations came into effect covering port operations, safety, hazardous cargo, licensing, finance, and environmental protection. MPA also began to receive substantial rental revenue (approximately US\$700,000 a year) directly from land lessees and a royalty payment for use of the facilities at the MCT. A Port Users' Council (PUC) was also established with a broad range of stakeholders as a permanent consultative forum. The Bank supported this reform process through funding institutional strengthening activities and giving advice as needed.

3.7 In compliance with the spirit of the Act, the Government of Mauritius formally withdrew MPA's 40 percent shareholding from CHCL to pave the way for CHCL to enter into a strategic partnership with an international container operator at a later stage.

7. Port Master Plan 2002-2025, Mauritius Ports Authority, February 2002.

Targets for performance have been agreed and are published in the Strategic and Financial Plan,<sup>8</sup> while the concession agreements are detailed in the CHCL Annual Reports.<sup>9</sup>

*Objective 3: To support the development of MFA to promote Mauritius as an attractive tax-free base for regional entrepôt trade. **Highly achieved.***

3.8 The Bank provided similar support to MFA to assist the organization to modernize. This involved dividing the organization into two independent entities: a Freeport Regulatory Agency in charge of issuing Freeport licenses and regulating Freeport operations and an operating company, known as Business Parks of Mauritius Ltd. (BPML), with a mandate to implement business and industrial parks. An enabling Freeport Act was passed on July 17, 2001. BPML established a new subsidiary called BPML Freeport Services, which was incorporated on November 19, 2001, and the Freeport Agency was reconstituted as the Freeport Unit of the Board of Investment. The Freeport is a duty-free zone covering 45 hectares of land in proximity to the terminal (see map) and where all goods imported, stored, and processed prior to re-export are exempted from import duties. To enhance the Freeport's attractiveness the new legislation has enabled an incentive package that includes corporate tax incentives, reduced port handling charges, free repatriation of profits, and access to offshore banking facilities. Logistics needs are supported by computerized services, an e-marketing capability, and an International Exhibition Center.<sup>10</sup> The outputs from all the above activities have been the growth in traffic at the Freeport (see paragraph 3.3) as well as increases in income for MFA from office and warehouse rental, and an increase in land values. In all cases the targets set at appraisal were exceeded.

*Objective 4: To accompany port development with sound environmental protection, including control of marine pollution, and port operations and vessels' safety enhancement. **Highly achieved.***

3.9 Following the completion of an environmental impact assessment for the new container terminal,<sup>11</sup> a study to define the requirements and to design facilities for the collection and disposal of land and ship-based oily waste was also undertaken. The IEG mission observed that facilities have now been established to collect and pre-treat such waste and that construction for the relocation and safe-handling of oil and LPG storage has been completed. Oil spill contingency plans are now in place, while training courses have been successfully completed to enable staff to combat oil spills and control vessel safety. As regards ships contravening port regulations through illegal discharge of oily wastes into the sea, heavy fines have been introduced to deter potential offenders<sup>12</sup>. A Port Safety and Environment Committee (PSEC) is now functioning. Since its inception,

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8. "Strategic and Financial Plan," Cargo Handling Corp. Ltd. 2003-2006

9. *Annual Report, 2003-2004*. Cargo Handling Corp. Ltd. Port Louis, Mauritius.

10. Mauritius Freeport Documentation for Investors, Board of Investment, Freeport Unit, 2005.

11. "New Container Terminal at Port Louis Harbor," Environmental Impact Assessment, Gibb Mauritius for Mauritius Marine Authority, January 1995.

12. MPA Annual Report 2003-2004.

PSEC has put in place a Port Safety Management Plan, held seminars on port safety to increase local awareness, and ensured harmony between the port and the city of Port Louis on these issues. Sector reform was achieved through an effective social plan and an agreement concerning redundancies was agreed with the unions. The IEG mission noted that this approach had been so successful that it had now been adopted by the local sugar industry.

## 4. Ratings

### Outcome

4.1 Based on the ratings for relevance, efficacy, and efficiency discussed below in paragraphs 4.2 – 4.7 the outcome of the project is rated **highly satisfactory**. All objectives were highly achieved with no shortcomings, including reform of the sector. Port productivity improved substantially and the volume of cargo handled grew dramatically. This generated various economic benefits and boosted the transshipment opportunities causing the Freeport to develop to a new level.

### *Relevance*

4.2 Project relevance is **high**. It was fully consonant with the Bank's 1994 CAS for Mauritius which aimed to help the country achieve its development priorities and sustain a higher level of economic performance based on increased competitiveness and diversification of production and exports, including the development of skills-intensive and service-based activities. This strategy was dependent on improving the efficiency and competitiveness of crucial infrastructure, including the main port. A key pillar of this approach was the encouragement of transshipment opportunities and the expansion of the Freeport. Protection of the environment is also crucial in Mauritius to sustain the country's natural assets for the benefit of both the local people and the tourist industry.

### *Efficacy*

4.3 The efficacy of the project is rated **high** because the project objectives were fully achieved without any major shortcomings and the Bank was complimented by the port authorities for its advice and support. All physical works were completed as planned. Port productivity was greatly improved and both the volume of cargo handled and the level of productivity achieved exceeded expectations. All legislative reforms and institutional restructuring arrangements were successfully concluded, while the management system was overhauled and performance agreements introduced. More flexible work arrangements were agreed with the unions, training was carried out, and the Port Master Plan was updated. A transshipment study aimed at assessing the potential for Mauritius to provide regional container operation services was not undertaken during the project implementation period, but the assessment mission found that the study has since been

concluded and a policy paper was completed in April 2005.<sup>13</sup> All environmental and safety aspects were attended to including the establishment of oily waste disposal facilities, as well as staff training and safety planning, which also involved the city of Port Louis.

### *Efficiency*

4.4 Project efficiency is rated **substantial**. Substantial cost savings were achieved due to competitive bids for the civil works. The ERR at appraisal was 20 percent. The recalculated ERR is 17 percent if based on the most conservative scenario of future container growth and number of vessel calls and 21 percent based on the best scenario presented in the updated Master Plan. However, there are good reasons to believe that a higher rate of benefits may accrue, in particular since some global carriers are now investing in the Freeport. For example, Maersk Logistics subsidiary Maersk-Sealand has already set up a branch in the Freeport to market additional logistics services to domestic and regional shippers. Additional revenues are also accruing to a number of Mauritian traders, which were not taken into account as such benefits were too difficult to quantify. (See Annex B, Table B6 for further details of assumptions and calculations).

4.5 MPA assets have grown from RS2.0 billion in 1995 to RS3.6 billion in 2000 and RS4.7 billion in 2004. MPA's profitability, measured by the return on assets, was 2.6 percent in 2000, 11.5 percent in 2003, and 10.9 percent in 2004. This information is shown in greater detail in Table 2.

**Table 2: Financial Performance Data for the Mauritius Ports Authority**

Item	1995	2000	2003	2004
Total Assets	RS2.0b	RS3.6b	RS4.5b	RS4.7b
Op. Margin (inc. dep.)	3 %	32%	10%	21%
Op. Margin (exc. Dep.)	42%	68%	36%	49%
Return on Assets	1.0%	3.6%	4.5%	4.7%
Op. Revenue (RS000)	245,994	559,613	891,412	844,558
Op. Expenses (RS000)	142,615	181,079	479,426	521,139
Net Income (RS000)	20,640	96,392	516,203	511,517
Debt/Equity	36%	127%	38%	32%

Source: Annual Reports of MPA

4.6 The debt/equity ratio, which peaked at 127 percent in 2000, has decreased to 32 percent in 2004 as much of the loan indebtedness has been reduced through loan repayments and paying off loans earlier than originally planned; the level of liquidity also was found to be satisfactory. The improvement in operating income can be attributed to the port investment, improved operational performance, and appropriate tariff adjustments. Overall, the result exceeds the appraisal best case scenario.

13. Policy Paper on Container Transshipment Strategy, MPA & CHCL, April 2005.

4.7 The Freeport, meanwhile, has grown strongly and the fixed assets were valued at US\$12.6 million in 2000; this growth has continued since then. By 2000 MFA had already succeeded in covering its operational costs.

### Institutional Development Impact

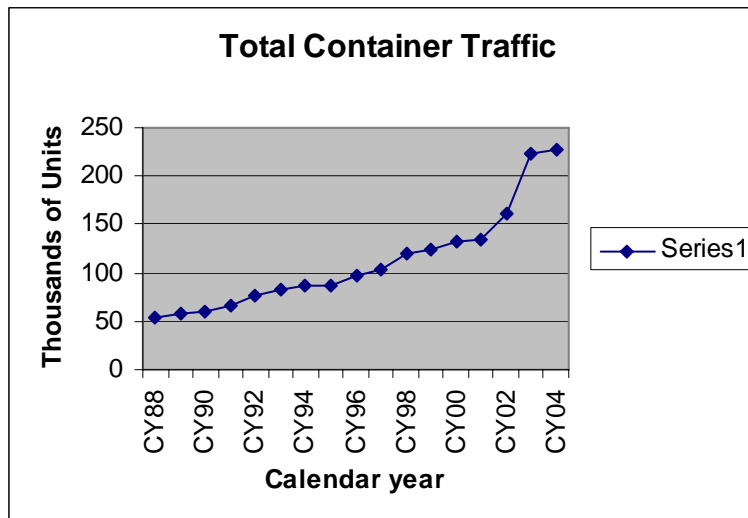
4.8 The institutional development impact of the project is rated **substantial**. The Ports Act of 1988, redefined the role of MPA as the port regulator and landlord, the concession contract to CHCL, and the inception of the PUC were all successful steps toward the transformation of the port sector. MPA, in its landlord capacity, has started receiving substantial rental revenue. The Social Plan implemented under the project was instrumental in optimizing staff numbers and improving operational efficiency. It also has facilitated an enhanced role for trade unions in decision-making. Courses offered by the Training Center have also been helpful in achieving productivity targets. The Freeport Act of 2001 enabled the separation of the regulator activities under the Freeport Unit of the Board of Trade, while operations are undertaken by private sector operating company, incorporated under the Mauritius Companies Act of 1984.

### Sustainability

4.9 The ICR, prepared in FY02, considered project sustainability to be “highly likely” based on the momentum experienced following the introduction of the institutional reforms and the degree of commitment to the project shown by the Government of Mauritius. Revenues and profits were improving substantially and productivity, quality, and efficiency had also risen to a new level. As a direct result of the project, Port Louis experienced an accelerating and unprecedented growth in its transshipment operations. See Figure 1.

**Figure 1: Growth in Port Louis Container Traffic**

*Note: Implementation period of project was CY96 to CY02.*





This IEG assessment, however, revises the sustainability rating to **likely**. The field visit focused on understanding the present (changing) situation and the current institutional dynamics. Since the growth in demand was part of MPA's strategy to establish Mauritius as an *entrepôt* destination such an expansion was of course to be welcomed, but the growth at the MCT was very much more rapid than anticipated and an internal Bank memorandum noted that it had tested the limits of the institutional and operational arrangements; in other words the problems were largely the results of the initial success. Once berth occupancy rates at MCT reached 90 percent, delays became unavoidable. A temporary solution was thus devised using a "berthing window" scheme that guaranteed berth availability at fixed arrival times. This was combined with efforts to further improve container handling productivity. Some harm was nevertheless done to the reputation of Port Louis as a transshipment destination because of delays experienced before the new scheme was introduced. Although the impact of the initiative quickly vindicated its introduction, with pre-berthing delays dropping significantly, P&O Shipping, a major transshipment operator, decided to stop calling at Port Louis "for the time being." A further problem then encountered was that crane productivity worsened when one of the gantry cranes could only operate at 40 percent capacity after being damaged in an accident and the consequential more intensive use of the remaining cranes led to more frequent breakdowns.

4.10 It is also apparent that CHCL has been undercapitalized and has been unable to make timely investment decisions. CHCL has been unable to react sufficiently quickly to rapidly changing market conditions – a good example being its failure to complete an emergency purchase of two gantry cranes in early 2004 to address the capacity problem. The advice given by the Bank according to internal documents is for CHCL to revisit the immediate need for an additional mobile crane while the acquisition of two additional new gantry cranes is pursued (delivery is not expected before late 2006).

4.11 It has also been the intention of the MPA, supported by CHCL, to bring in a strategic partner as a second operator in the port. A public-private partnership could mobilize private financing for both infrastructure and equipment needs. However, before this can be accomplished CHCL needs assistance to strengthen both its capitalization and market response capacity to put it on an equal footing with any prospective competitor. This course of action would minimize public financing in the sector. The existence of a very good monitoring indicator system, whereby potential investors can track port usage, productivity and the extent of the financial soundness of the port authorities and operators is a positive factor in attracting more private sector involvement.

4.12 Finally, in the medium term and in accordance with the MPA Port Master Plan, the CHCL Strategic and Financial Plan and the Transshipment Policy documents, a decision needs to be taken to increase MCT's throughput capacity. Several appropriate infrastructure improvement options are possible, including extending the existing berths or upgrading the adjacent multi-purpose terminal to a full-fledged container terminal, accommodating gantry cranes and offering a depth of 16 meters. At the time of the IEG mission the climate was not right for such decisions because a national election was pending. On balance, the record of the government and port authorities indicates that such decisions will not be deferred for too long, but the fact is that a new initiative is

needed to launch the port into a new era and assure sustainability. There is now an opportunity to allow the private sector to provide most of the required investment.

### **Bank Performance**

4.13 Bank performance is rated **highly satisfactory**, which is an upgrade from the ICR rating of satisfactory. The Bank adopted a participatory approach in designing the project and this was one of the first Bank projects to recognize trade union leaders as part of the negotiation team. The Bank formally invited, with the concurrence of the government, the President of the Port Louis Harbor and Dock Workers Union to join in the negotiations conducted in the Bank's headquarters in Washington, D.C. Regular consultations were held with the private sector as well, which led to the establishment of the PUC. The Bank was also proactive in pursuing dialogue with the government for the sector reform.

4.14 Supervision was frequent, appropriate, and timely. The Bank worked closely with both the government and implementing agencies, provided them with extensive assistance including suggestions for the drafting of laws and regulations as well as excellent technical advice. Enquiries by the assessment mission confirmed that the Bank's input was of a high caliber and highly valued. MFA in particular commented on the remarkable response time in respect of payments to contractors and noted that because they had the opportunity to meet with the Bank disbursement officer at project inception this proved invaluable in clarifying the various procedures. The Bank's exceptional ongoing support after project closure was also mentioned.

### **Borrower Performance**

4.15 Borrower performance is rated **highly satisfactory**. Both government officials and staff of the implementing agencies displayed a high level of commitment and enthusiasm for the project. Despite changes in administrations the government remained firm and resilient in its commitment to sector reform because of a shared vision. MPA and MFA have available on a continuous basis high-quality professional staff that, throughout the project, was well-organized and effective in dealing with problems as they arose. The handling of financial matters was exemplary and there was complete transparency on the part of the implementing agencies, which contributed to achieving good industrial relations.

## **5. Conclusions and Lessons**

### **Strong Government Commitment**

5.1 This project was highly successful because from the outset there was strong government commitment, supported by the implementing agencies, to reform the port sector in the interests of the country. There was consistency in political will and a constant vision of what was to be achieved despite changes in administrations. The

project is now seen as a model for the implementation of other projects in Mauritius. For example, the voluntary retirement scheme has also been replicated in the local sugar industry.

### **Participatory Approach**

5.2 The success of the project is, in addition, due to the excellence of its participatory approach and broad consultation process. There were substantial social implications arising from the new institutional framework with implications both for employment and conditions of service. Bringing in the trade union at an early stage helped to overcome potential misunderstandings and created a mutually supportive instead of a confrontational situation. Because of the large number of stakeholders the consultative approach to the Master Study Plan and the creation of the PUC were very helpful and led to general agreement on the way forward.

### **Exchange Rate Risks**

5.3 MPA did experience some losses due to adverse movements in the US dollar exchange rate on its borrowings. This indicates the importance of a comprehensive assessment of the risks associated with different financial instruments and the importance of a financial hedging strategy even when there appears to be no impending market problems. While both the Bank and the borrower were aware of normal risks and discussed this matter during negotiations, neither party could reasonably have foreseen the extent of market volatility caused by the sudden Asian financial crisis, and the unexpected difficulties in buying US dollars on the local Mauritian market to hedge against exchange rate variations.

### **Monitoring Indicators**

5.4 Part of the reason for the ability of MPA to adjust its operating strategy and productivity to changes in the market it serves is its maintenance of a very good monitoring indicator system. This was also useful during project implementation and will be of interest in the future to potential investors from the private sector. Typical indicators include financial indicators (such as working ratio, debt/equity and frequency and extent of tariff increases), cargo handling rates, productivity measures and equipment availability rates.

### **Future Port Development**

5.5 The developments in the port sector in Mauritius have been successful and highly viable, but further expansion is urgently needed. At the same time increasing demands on public sector funds make the idea of private sector port investment more attractive. This would transfer the risk and enable a speedier response to changing market conditions.

5.6 The following lessons may be drawn from the experience of this project:

- *Key factors for a successful infrastructure port reform project are strong commitment from government, consistency of political will even when administrations change, and an inclusive participatory approach with a broad consultation process.*
  
- *A good monitoring indicator system can help a port operator to adapt both its operating strategy and productivity level quickly when it needs to respond to changes in market demand.*
  
- *Once a port has proved to be commercially successful, private sector investment should be a strong option for any future development, since its viability will encourage potential investors to take on the risks involved. The participation of the private sector usually also ensures a speedier response to changing market conditions.*

## Annex A. Basic Data Sheet

### Key Project Data *(amounts in US\$ million)*

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	100.2	64.4	64.3
Loan amount	30.5	15.5	50.8
Cofinancing	53.8	29.0	53.9
Cancellation	-	16.0	-

### Project Dates

	<i>Original</i>	<i>Actual</i>
Board approval	06/20/1995	06/20/1995
Effectiveness	03/04/1996	03/04/1996
Closing date	12/31/2001	12/31/2001

### Staff Inputs *(staff weeks)*

Stage of Project Cycle	No. Staff Weeks	Actual/Latest Estimate	
			US\$'000
Identification/Preparation	83.9		287.0
Appraisal/Negotiation	32.1		124.3
Supervision	71.6		346.3
ICR	4.8		58.9
Total	192.4		816.5

**Mission Data**

	<i>Date (month/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Rating trend Types of problems</i>	
Identification/ Preparation	June /93	2	1 Transport Economist, 1 Port Engineer		
	November/93	2	1 Transport Economist, 1 Port Engineer		
	February/94	2	1 Transport Economist, 1 Port Engineer		
Appraisal/Negotiation	December/94	5	1 Transport Economist, 1 Port Engineer, 1 Legal Counsel, 1 Procurement Specialist, 1 Financial Analyst		
Supervision	March/96	2	1 Transport Economist, 1 Port Engineer	S	S
	October /96	3	1 Transport Economist, 1 Port Engineer, 1 Financial Analyst	S	S
	March/97	3	1 Technical Manager, 1 Port Engineer, 1 Financial Analyst	S	S
	June/97	1	1 Port Engineer	S	S
	November/97	2	1 Transport Economist, 1 Port Engineer	S	S
	June/98	3	1 Transport Economist, 1 Port Engineer, 1 Consultant	S	S
	October/98	1	1 Port Specialist	S	S
	February/99	1	1 Port Specialist	S	S
	April/99	4	1 Port Specialist, 2 Financial Management Specialists, 1 Disbursement Analyst	S	S
	July/99	1	1 Port Specialist	S	S
	October/99	1	1 Port Specialist	S	S
	March/00	1	1 Port Specialist	S	S
	June/00	1	1 Port Specialist	S	S
	December/00	1	1 Port Specialist	S	S
	February/01	5	2 Port Specialist, 1 Financial Analyst, 2 Disbursement Officers	S	S
July/01	1	1 Port Specialist	S	S	
<b>ICR</b>	January/02	2	1 Port Specialist, 1 Consultant		

**Annex B.****Table B1: Mauritius Ports Authority, Container Traffic (Units). Percentage of 40' & 20' - (Laden & Empty)**

CAL. YEAR	FORTY FOOT			TWENTY FOOT + OTHERS			GRAND	PERCENTAGE	
	LADEN	EMPTY	TOTAL	LADEN	EMPTY	TOTAL	TOTAL	%	
	UNITS		( A )	UNITS		( B )	( A+B )	40'	20'
1988	1,148	817	1,965	35,408	16,238	51,646	53,611	3.67	96.33
1989	2,109	738	2,847	38,020	16,058	54,078	56,925	5.00	95.00
1990	2,169	1,185	3,354	39,597	15,927	55,524	58,878	5.70	94.30
1991	2,358	1,254	3,612	44,005	19,002	63,007	66,619	5.42	94.58
1992	2,998	1,412	4,410	49,647	21,777	71,424	75,834	5.82	94.18
1993	4,253	2,280	6,533	53,391	21,873	75,264	81,797	7.99	92.01
1994	5,044	2,187	7,231	55,150	24,123	79,273	86,504	8.36	91.64
1995	5,561	1,708	7,269	55,197	23,173	78,370	85,639	8.49	91.51
1996	6,713	2,377	9,090	60,980	26,539	87,519	96,609	9.41	90.59
1997	8,766	3,792	12,558	63,567	28,315	91,882	104,440	12.02	87.98
1998	11,489	5,168	16,657	67,071	36,242	103,313	119,970	13.88	86.12
1999	14,463	6,872	21,335	69,963	31,623	101,586	122,921	17.36	82.64
2000	16,701	8,712	25,413	72,912	33,699	106,611	132,024	19.25	80.75
2001	18,764	8,040	26,804	74,115	33,926	108,041	134,845	19.88	80.12
2002	22,812	14,066	36,878	81,389	43,054	124,443	161,321	22.86	77.14
2003	36,491	21,695	58,186	115,640	49,901	165,541	223,727	26.01	73.99
2004	40,457	22,523	62,980	112,852	51,328	164,180	227,160	27.72	72.28
Jan/Mar05	7,199	3,833	11,032	23,799	10,739	34,538	45,570	24.21	75.79

**Table B2: Mauritius Port Authority – Container Traffic (Units) - Percentage of 40' & 20' & Others (Import and Export).**

CAL. YEAR	FORTY FOOT					TWENTY FOOT			
	LADEN		EMPTY		TOTAL ( A )	LADEN		EMPTY	
	IMPORT	EXPORT	IMPORT	EXPORT		IMPORT	EXPORT	IMPORT	EXPORT
1996	3,898	2,815	873	1,504	9,090	41,593	19,305	2,828	23,711
1997	5,454	3,312	1,114	2,648	12,528	43,679	19,816	3,167	25,178
1998	6,808	4,692	1,748	3,264	16,512	48,141	18,891	4,162	32,170
1999	9,422	5,041	2,086	4,786	21,335	49,556	20,407	3,088	28,535
2000	10,614	6,087	2,497	6,215	25,413	50,079	22,833	4,358	29,311
2001	12,027	6,737	1,871	6,169	26,804	50,553	23,536	4,933	28,993
2002	16,592	6,220	6,673	7,393	36,878	58,198	23,151	13,070	29,984
2003	29,102	7,389	12,490	9,205	58,186	89,360	26,239	20,189	29,712
2004	32,706	7,751	10,716	11,807	62,980	88,695	24,121	19,169	32,159
Jan/Mar05	5,741	1,458	1,079	2,754	11,032	18,634	5,162	3,964	6,775

Note:-

Total ( A ) represents total of FORTY FOOTER containers only.

Total ( B ) represents total of TWENTY FOOTER containers only.

Total ( C ) represents total of OTHER containers only.



**Table B3: Mauritius Freeport Container Traffic (Units)**

CALENDAR YEAR (Number of Units)										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	
IMPORT	160	173	565	867	1114	1054	1167	1441	1571	1025
EXPORT		128	485	707	922	1124	1232	1414	1239	529
<b>TOTAL</b>	160	301	1050	1574	2036	2178	2399	2855	2810	1554
	FINANCIAL YEAR (Number of Units)									
	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	
IMPORT	296	682	945	1069	1242	1297	1222	1525	1842	
EXPORT	245	593	771	1027	1204	1468	1001	1594	1846	
<b>TOTAL</b>	541	1275	1716	2096	2446	2765	2223	3119	3688	
1994	3,022	2,022	588	1,599	7,231	37,493	17,679	2,790	21,338	
1995	3,224	2,337	497	1,211	7,269	37,496	17,701	2,700	20,473	

Source: Mauritius Ports Authority

**Table B4: Container Traffic 2004**

MAURITIUS PORTS AUTHORITY - CONTAINER TRAFFIC handled in TERMS of TEUS - FINANCIAL YEAR										Jul04/ Mar05 v/s Jul03/Mar04		AVERAGE PER MONTH		
FINANCIAL YEAR		95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	03/04	03/04	04/05
-													12	9
L	IMPORT	46,577	49,998	57,247	62,116	65,990	70,066	70,756	77,352	83,525	58,938	61,121	6960.4	6548.7
A														-411.8
D	EXPORT	22,848	25,369	27,841	28,916	32,774	36,168	35,263	39,103	40,751	28,906	30,984	3395.9	3211.8
E														-184.1
N	TRANS IN	1,114	945	923	1,905	5,299	3,502	5,170	45,101	76,335	45,459	56,804	6361.3	5051.0
														-1310.3
	TOTAL ( LADEN )	70,539	76,312	86,011	92,937	104,063	109,736	111,189	161,556	200,611	133,303	148,909	16717.6	14811.4
-														-1906.1
E	IMPORT	3,784	4,262	6,393	6,946	7,600	9,546	7,818	8,925	10,789	8,531	8,274	899.1	947.9
M														48.8
P	EXPORT	26,250	27,143	32,741	40,307	40,024	41,717	41,655	47,530	53,210	39,654	38,367	4434.2	4406.0
T														-28.2
Y	TRANS IN	106	71	53	221	1,106	275	5,004	28,688	34,952	17,887	25,488	2912.7	1987.4
														-925.2
	TOTAL ( EMPTY )	30,140	31,476	39,187	47,474	48,730	51,538	54,477	85,143	98,951	66,072	72,129	8245.9	7341.3
	TOTAL ( L + E )	100,679	107,788	125,198	140,411	152,793	161,274	165,666	246,699	299,562	199,375	221,038	24963.5	22152.8
	Percentage +/-		7.1	16.2	12.2	8.8	5.6	2.7	48.9	21.4	-33.4	10.9		-2810.7
	FREEPORT TRAFFIC UNITS	541	1,275	1,716	2,096	2,446	2,765	2,223	3,119	3,688	2,102	2,911	307.3	233.6
					FREEPORT TRAFFIC TEUS			2,784	3,931	4,992	2,850	3,919	416.0	316.7

MAURITIUS PORT AUTHORITY - CONTAINER TRAFFIC handled in TERMS of TEUS ( CALENDAR YEAR )											JAN/MAR05 v/s JAN/MAR04		AVERAGE PER MONTH	
CALENDAR	YEAR	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2004	2005	2004
-													9	
L	IMPORT	48,440	53,637	60,563	63,423	68,019	71,234	74,140	79,014	83,590	16,278	18,527	1808.7	2058.6
A														249.9
D	EXPORT	24,910	26,420	28,262	30,480	35,000	37,002	35,580	41,006	39,611	8,078	9,016	897.6	1001.8
E														104.2
N	TRANS IN	1,017	1,004	1,247	5,000	3,311	3,392	17,273	68,579	70,548	13,840	19,398	1537.8	2155.3
														617.6
TOTAL ( LADEN )		74,367	81,061	90,072	98,903	106,330	111,628	126,993	188,599	193,749	38,196	46,941	4244.0	5215.7
-														971.7
E	IMPORT	4,431	5,384	7,422	6,178	9,245	8,193	7,594	11,465	10,828	2,207	1,990	245.2	221.1
M														-24.1
P	EXPORT	26,719	30,473	38,694	38,107	41,741	41,331	44,770	48,122	55,773	12,283	13,559	1364.8	1506.6
T														141.8
Y	TRANS IN	134	38	229	1,081	104	482	18,820	33,703	29,768	3,915	6,332	435.0	703.6
														268.6
TOTAL ( EMPTY )		31,284	35,895	46,345	45,366	51,090	50,006	71,184	93,290	96,369	18,405	21,881	2045.0	2431.2
TOTAL ( L + E )		105,651	116,956	136,417	144,269	157,420	161,634	198,177	281,889	290,118	56,601	68,822	6289.0	7646.9
	Percentage +/-		10.7	16.6	5.8	9.1	2.7	22.6	42.2	2.9	-80.5	21.6		
FREEPORT TRAFFIC UNITS		1,050	1,574	2,036	2,178	2,399	2,855	2,810	3,211	3,022	671	814		
FREEPORT TRAFFIC TEUS							3,561	3,507	4,209	4,081	958	1,116		
									TRANSHIP	102,282	100,316	17,755	25,730	

Source: Mauritius Ports Authority

**Table B5: Mauritius Ports Authority - Cargo Traffic Calendar Year 1999-2004**

ITEMS	1999	2000	2001	2002	2003	2004	JAN/MAR 05
<u>I.BAGGED CARGO</u>							
(A) IMPORT							
RICE	57,058	49,715	12,025				
FLOUR							
PULSES	431	151					
ANIMAL FEED	2,104	130	146		250		
FERTILIZER	1,186	575	1,458				
SUB TOTAL (A)	60,779	50,571	13,629	0	250	0	0
<u>(B) EXPORT</u>							
BAGGED SUGAR							
FERTILIZER							
SUB TOTAL (B)	0	0	0	0	0	0	0
TOTAL (A+B)	60,779	50,571	13,629	0	250	0	0
<u>II.BULK CARGO</u>							
(C) IMPORT							
BITUMEN	7,378	9,881	6,346	11,192	8,938	7,175	1,765
SOYA BEAN MEAL	24,982	30,502	29,296	28,775	27,670	35,293	5,300
WHEAT	139,400	150,263	118,126	136,337	153,169	97,730	46,200
MAIZE	56,706	71,123	69,711	80,486	72,882	89,134	12,250
FERTILIZER	37,531	61,335	67,793	43,200	51,126	59,446	15,477
COAL	134,409	299,274	307,816	279,972	331,164	331,985	83,614
LIQUID AMMONIA	18,700	18,996	25,500	11,542	27,500	11,100	6,500
EDIBLE OIL	29,450	29,026	30,000	30,501	27,013	26,987	1,300
TALLOW	4,629	3,391	2,432	2,141	2,601	1,008	
PUMICE STONE			3,130				

<b>ITEMS</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>JAN/MAR 05</b>
CEMENT	624,211	631,460	646,953	665,372	647,992	727,838	172,664
PETROLEUM WHITE OIL	620,211	632,135	637,893	632,489	646,357	691,172	169,757
BLACK OIL	259,639	257,597	279,924	250,145	296,018	296,700	108,340
PRODUCTS L.P.GAS	45,863	45,425	45,912	51,186	50,658	55,395	13,591
SUB TOTAL (C)	2,003,109	2,240,408	2,270,832	2,223,338	2,343,088	2,430,963	636,758
(D) EXPORT							
FERTILIZER	2,500	4,831	4,479	3,505	3,055	380	
SUGAR	465,500	355,880	532,249	501,960	445,727	485,393	104,000
MOLASSES	107,234	88,711	151,440	103,105	96,775	124,650	
BUNKER PIPE-LINE	81,523	124,671	144,748	122,002	98,611	98,625	26,209
BUNKER BARGE	51,098	68,530	55,144	30,346	31,068	46,455	8,925
MAIZE							
WHEAT							
ETHANOL (Raw Methyl Alcohol)						2,776	
BLACK OIL		800					
AGGREGATES						31,557	
SUB TOTAL (D)	707,855	643,423	888,060	760,918	675,236	789,836	139,134

TOTAL (C+D)	2,710,964	2,883,831	3,158,892	2,984,256	3,018,324	3,220,799	775,892
III.GENERAL CARGO							
(E) IMPORT	142,334	126,685	130,625	134,880	116,459	113,518	20,968
(F) EXPORT	1,675	819	1,887	2,901	2,670	1,413	219
(G) TRANS IN.	1,361	112	72	100			
TOTAL (E+F+G)	145,370	127,616	132,584	137,881	119,129	114,931	21,187
IV.CONTAINERISED							
(H) IMPORT	764,682	829,179	886,653	919,199	969,847	1,040,282	201,660
(I) EXPORT	354,836	403,239	430,091	403,158	451,815	449,822	90,432
(J) TRANS IN.	63,143	41,542	41,473	207,126	836,503	894,523	169,878
TOTAL (H+I+J)	1,182,661	1,273,960	1,358,217	1,529,483	2,258,165	2,384,627	461,970
V.INTER-ISLAND							
RODRIGUES (K) IMPORT	734	1,133	1,666	1,061	1,105	1,528	137
GEN.CARGO (L) EXPORT	12,283	15,063	13,493	13,167	13,817	9,624	1,571
TOTAL (K+L)	13,017	16,196	15,159	14,228	14,922	11,152	1,708
ROD'S CONTAINERISED							
(O) IMPORT	5,602	8,060	7,061	10,559	8,486	7,764	1,813
(P) EXPORT	25,133	29,482	33,302	46,005	54,621	50,548	10,536
TOTAL (O+P)	30,735	37,542	40,363	56,564	63,107	58,312	12,349
VI.FISH							
(M) LOCAL MARKET	25,230	32,659	44,836	50,120	50,182	40,001	11,373
(N){TRANS} IN.	26,276	37,541	36,588	27,730	19,571	20,585	5,732
{TRANS} OUT.	12,571	9,759	9,936	10,233	4,354	2,918	5
TOTAL (M+N)	64,077	79,959	91,360	88,083	74,107	63,504	17,110
GRAND TOTAL	4,207,603	4,469,675	4,810,204	4,810,495	5,548,004	5,853,325	1,290,216
PERCENTAGE +/-		6.23	7.62	0.01	15.33	5.50	-77.96

Source: Mauritius Port Authority

**Table B6 - Internal Rate of Return Calculation**

Year	#	#ships	waiting time without MCT(days)	waiting time with MCT (days)	reduction in turnaround costs (US\$)
1996	1				
1997	2				
1998	3	350	263		
1999	4	386	347	43	8,982,542
2000	5	429	386	29	10,287,956
2001	6	508	457	23	12,346,517
2002	7	550	495	21	13,438,333
2003	8	578	520	22	14,110,250
2004	9	606	591	18	15,598,997
2005	10	637	621	19	16,378,947
2006	11	669	652	19	17,197,894
2007	12	702	684	20	18,057,789
2008	13	737	719	21	18,960,678
2009	14	774	813	23	20,808,377
2010	15	813	853	24	21,848,796
2011	16	853	896	25	22,941,236
2012	17	896	941	26	24,088,297
2013	18	941	988	27	25,292,712
2014	19	988	1111	29	27,705,573
2015	20	1037	1167	30	29,090,852
2016	21	1089	1225	32	30,545,395
2017	22	1143	1286	33	32,072,664
2018	23	1201	1351	35	33,676,298
2019	24	1261	1418	37	35,360,113
2020	25	1324	1489	39	37,128,118

Containers (TEUs)	Reduction Handling Charges \$	Capital Costs \$	TA & Training \$	Maintenance Infra \$	Maintenance Equipment \$	Total Benefits \$
105,651		-14000000	-250000			
116,956		-22000000	-250000			
136,417		-18700000				
144,269				-300000	-480000	8,982,542
157,420	314,840			-300000	-480000	10,602,796
161,634	323,268			-300000	-480000	12,669,785
171,332	342,664			-300000	-480000	13,780,997
181,612	363,224			-300000	-480000	14,473,474
192,509	385,017			-300000	-480000	15,984,014
204,059	408,118			-300000	-480000	16,787,065
216,303	432,606			-300000	-480000	17,630,500
229,281	458,562			-300000	-480000	18,516,351
243,038	486,076			-300000	-480000	19,446,754
257,620	515,240			-300000	-480000	21,323,617
273,077	546,154			-300000	-480000	22,394,950
289,462	578,924			-300000	-480000	23,520,159
306,830	613,659			-300000	-480000	24,701,957
325,239	650,479			-300000	-480000	25,943,191
344,754	689,507			-300000	-480000	28,395,081
365,439	730,878			-300000	-480000	29,821,730
387,365	774,731			-300000	-480000	31,320,125
410,607	821,214	5000000		-300000	-480000	32,893,879
435,244	870,487			-300000	-480000	34,546,785
461,358	922,717			-300000	-480000	36,282,829
489,040	978,079			-300000	-480000	38,106,198

<b>ERR =</b>	<b>21%</b>	<b>17%</b>	<b>18%</b>
<b>Total Costs \$</b>	<b>TOTAL NET</b>	<b>TOTAL NET</b>	<b>TOTAL NET</b>
		<b>75% National</b>	<b>80% National</b>
-14250000	-14250000	-14250000	-14250000
-22250000	-22250000	-22250000	-22250000
-18700000	-18700000	-18700000	-18700000
-780000	8202541.7	5956906.25	6406033.333
-780000	9822796.3	7172097.188	7702237
-780000	11889785	8722338.5	9355827.733
-780000	13000997	9555748.06	10244797.93
-780000	13693474	10075105.44	10798779.14
-780000	15204014	11208010.68	12007211.39
-780000	16007065	11810298.84	12649652.1
-780000	16850500	12442874.67	13324399.65
-780000	17736351	13107262.95	14033080.48
-780000	18666754.1	3805065.31	14777402.99
-780000	20543617	15212712.76	16278893.61
-780000	21614950	16016212.7	17135960.22
-780000	22740159	16860119.5	18036127.46
-780000	23921957	17746467.4	18981565.22
-780000	25163191	18677393.21	19974552.76
-780000	27615081	20516310.69	21936064.74
-780000	29041730	21586297.53	23077384.03
-780000	30540125	22710093.99	24276100.26
4220000	37113879	28890409.17	30535103.12
-780000	33766785	25130088.74	26857427.99
-780000	35502829	26432121.83	28246263.29
-780000	37326198	27799648.3	29704958.18

Source: ICR

*Note: Assumptions on future container traffic and vessel calls are based on the 2002 MPA Port Master Plan using the low case scenario to keep with a conservative approach. The gross ERR is 21%. Based on the SAR assumption that 75% only of the benefits would accrue to the Mauritian economy, the project ERR would be 17%. Given, however, that there is evidence of new value-adding services being developed it is more likely that 80% of the benefits would apply to Mauritius. This would put the proposed ex-post ERR at 18%.*



## **Annex C. Borrower Comments**



## Map