

Document of
The World Bank

Report No: 27517

IMPLEMENTATION COMPLETION REPORT
(FSLT-70110)

ON A

LOAN

IN THE AMOUNT OF US\$4.75 MILLION

TO THE REPUBLIC OF

MAURITIUS

FOR A

FINANCIAL SECTOR INFRASTRUCTURE PROJECT

DECEMBER 31, 2003

**Private Sector Finance Unit
Africa Region**

CURRENCY EQUIVALENTS

(Exchange Rate Effective December 17, 2003)

Currency Unit = MUR
26.425 MUR = US\$ 1
US\$ 1 = 26.425 MUR

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

BIS	Basel Internet Committees and Bank Supervision
BOM	Bank of Mauritius
CPSS	Committee on Payment and Settlement Systems
DPS	Direct Participants System
LACI	Loan Administration Change Initiative
LAN	Local Area Network
MACSS	Mauritius Automated Clearing and Settlement Systems
MOF	Ministry of Finance
PCC	Project Coordination Committee
PER	Public Expenditure Review
PERL	Public Expenditure Reform Loan
RTGS	Real Time Gross Settlement
SADC	Southern African Development Committee

Vice President:	Callisto E. Madavo
Country Director:	Hafez M. H. Ghanem
Sector Manager:	Gerard A. Byam
Task Team Leader/Task Manager:	Ahmet Soylemezoglu

MAURITIUS
Financial Sector Infrastructure Project

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<i>Project ID:</i> P066198	<i>Project Name:</i> Financial Sector Infrastructure Project
<i>Team Leader:</i> Ahmet I. Soylemezoglu	<i>TL Unit:</i> AFTFS
<i>ICR Type:</i> Core ICR	<i>Report Date:</i> December 31, 2003

1. Project Data

Name: Financial Sector Infrastructure Project *L/C/TF Number:* FSLT-70110
Country/Department: MAURITIUS *Region:* Africa Regional Office

Sector/subsector: Payment systems, securities clearance and settlement (70%); Central government administration (30%)

Theme: Debt management and fiscal sustainability (P); International financial architecture (P); Standards and financial reporting (P); Legal institutions for a market economy (S)

KEY DATES

	<i>Original</i>	<i>Revised/Actual</i>
<i>PCD:</i> 09/09/1999	<i>Effective:</i> 08/30/2000	07/24/2000
<i>Appraisal:</i> 09/25/1999	<i>MTR:</i>	
<i>Approval:</i> 04/04/2000	<i>Closing:</i> 01/30/2002	06/30/2003

Borrower/Implementing Agency: BANK OF MAURITIUS/BANK OF MAURITIUS

Other Partners:

STAFF	Current	At Appraisal
<i>Vice President:</i>	Callisto E. Madavo	Callisto E. Madavo
<i>Country Director:</i>	Hafez M. H. Ghanem	Hafez M. H. Ghanem
<i>Sector Manager:</i>	Gerard A. Byam	Gerard A. Byam
<i>Team Leader at ICR:</i>	Ahmet Soylemezoglu	Ahmet Soylemezoglu
<i>ICR Primary Author:</i>	Ahmet Soylemezoglu	

2. Principal Performance Ratings

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HL=Highly Likely, L=Likely, UN=Unlikely, HUN=Highly Unlikely, HU=Highly Unsatisfactory, H=High, SU=Substantial, M=Modest, N=Negligible)

Outcome: S
Sustainability: HL
Institutional Development Impact: H
Bank Performance: S
Borrower Performance: S

QAG (if available) ICR
Quality at Entry: S
Project at Risk at Any Time: No

3. Assessment of Development Objective and Design, and of Quality at Entry

3.1 Original Objective:

The context. Mauritius has been aiming to diversify its economy away from sugar and textiles. Becoming a regional trading hub and a major center of financial services are two interlinked goals of Mauritian policy makers in this diversification process. Mauritius has also been trying to improve its macroeconomic management tools as its developmental goals can only be attained within a stable macroeconomic environment.

Objectives. The project aimed to: (i) build essential financial system infrastructure to facilitate the secure, rapid and certain transfer of funds; and (ii) assist in the creation of an institutional framework to better manage government's debt.

Assessment. The objectives of the project were consistent with Mauritius's overall development goals and the Bank's Country Assessment Strategy (CAS). These objectives were also interlinked. A well-functioning payment and settlement system facilitates government's interaction of financial markets and enhances efficiency of debt management.

Each component posed two very different sets of challenges. The payment system component required all the stakeholders to act in unison in accordance with very strict timetable whereas the debt and cash management component required adaptive responses to the evolving political economy. The design of the project took into account these considerations. The Payment System component was defined with greater detail and specificity while Debt and Cash Management component was broadly defined with ample room to maneuver during implementation.

The project was designed with significant preparatory work which was carried out by Mauritian Authorities in close collaboration with Bank staff. The project was to be implemented by the Ministry of Finance (Debt and Cash Management component) and the Bank of Mauritius (Payment System component). The operational demands on implementing agencies were carefully assessed during appraisal and appropriate technical assistance was included in the project to support implementation. Both of these institutions had the competence and resources to carry out project implementation.

The project's objectives were validated by the recently completed joint Bank-Fund Financial Sector Assessment Program (FSAP). The FSAP noted that the payment system installed by the project is an essential part of Mauritius's financial sector infrastructure. The FSAP also noted that improving the efficiency of government's debt management is critical for the development of capital markets in Mauritius. The FSAP indicated that the work initiated by this project has set the right course for Mauritius.

3.2 Revised Objective:

The objectives of the project have not been revised.

3.3 Original Components:

The project originally contained two components: a) Payment System; b) Government Cash and Debt Management.

Component 1: Payment System (\$4.0 million)

This component is designed in three parts: a) Computer Based Application Software; b) Project Support; and c) Computer and Telecommunications Equipment. The design of these components were clearly linked to the project's objective of building a funds transfer mechanism which is secure, instantenous and certain.

Component 2: Government Cash and Debt Management (\$1.68 million)

This component contained two stages of technical assistance to build an institutional framework to better manage public debt. The first stage was essentially a comprehensive stock-taking exercise on the existing systems as well as laying out options to build a better debt and cash management systems. The second stage was conceived to be the stage to lay foundations of an effective debt and cash management systems by creating the institutional framework to develop a modern debt management system.

Assessment of Design of Project Components. The design of each component is markedly different due to the nature of the components. The payment system component provides a clear implementation road map. The design of this component includes all the necessary elements for building an efficient payment system. It should be noted that the design of this component encompasses not only hardware and software requirements of an automated real-time-gross-settlement (RTGS) type payment system but provision of necessary technical support to Bank of Mauritius to ensure successful implementation.

The Government Debt and Cash Management component does not offer a detailed road map for implementation. It provides an outline of a strategy to build a better cash and debt management system over time. The design of this component contains three essential dimensions of building such systems: a) understanding of existing mechanisms of issuing and managing government debt and managing government cash; b) informing key policy makers on the best practices in the world; and c) describing necessary institutional changes required to establish state-of-the art debt and cash management systems.

The two components are also mutually supportive. Maximum efficiency in debt and cash management systems could not be attained without a well functioning real time payment and settlement systems. Furthermore, government's integration in financial markets through a well

functioning payment and settlement system enhances the quality of interaction between government and financial markets. Likewise, government's participation in any payment and settlement system enhances the credibility of that system. Moreover, government's participation in any payment system, especially in developing economies, substantially increases volume in that system.

3.4 Revised Components:

The project's main framework was kept intact. However, a portion of the loan was cancelled due to: a) savings realized during the competitive bidding process for the payment system; b) a greater utilization of existing IT equipment and software for the debt and cash management component; c) utilization of software provided by bilateral donors; and d) postponing training programs due to delays in staffing of the debt management unit.

3.5 Quality at Entry:

The project was reviewed by a Quality Assurance Group (QAG) Quality at Entry Panel. The QAG Panel's overall assessment was satisfactory. The QAG panel rated the project's concept, objectives, approach and implementation arrangements as "Best Practice" and innovative. The QAG also noted the following strong aspects of the project: a) emphasis on institution and capacity building; b) two-stage design of debt and cash management component; c) high-quality background technical work on debt management; and d) highly qualified task team. The QAG panel noted that the project document should have better articulated linkages between debt management systems and payment system as well as better presentation of financial management aspects of the project. The panel indicated that the project helped to underscore the positive effects of strong borrower ownership. The QAG also noted that the project demonstrated how a well qualified and cohesive team can put together a good operation with very limited budgetary resources.

4. Achievement of Objective and Outputs

4.1 Outcome/achievement of objective:

Achievement of objectives of the project was *satisfactory*. Key policy and institutional reforms supported by the project have all been met. Mauritius now has a world class state-of-the-art RTGS. This system provides necessary infrastructure to pursue Mauritius's developmental goal of establishing an internationally recognized financial services industry. This modern payment system is an effective macroeconomic management tool which helps government better monitor and manage its debt and cash.

The project also facilitated creation of an institutional framework for a modern debt management system. This institutional framework includes an independent and dedicated debt management unit at the Ministry of Finance and two high-level steering committees comprising all the key officers from Bank of Mauritius and the Ministry of Finance. Creation of this institutional structure was a result of: a) a detailed analysis of the existing mechanisms; b) review of best practices around the world; and c) assessment of Mauritian circumstances.

4.2 Outputs by components:

Payment System Component. This component aimed to install a modern RTGS system in Mauritius. The system was installed successfully. This component is rated as *Highly Satisfactory*. It is now considered as best practice by payment system specialists and experts. The main output of this component is the building of MACSS (Mauritius Automated Clearing and Settlement System). This output is highly consistent with the project's objectives and country's developmental goals and financial sector policies. Furthermore, MACSS became especially valuable given the recent emphasis on recording and monitoring funds flow to combat money-laundering and illicit activities around the world.

Having a real-time gross settlement system made Mauritius one of the leading financial systems in the SADC region. MACSS also helped Mauritius to pursue its developmental goals in the financial services industry. MACSS is providing a number of benefits. Among these are: a) it enhances the efficiency of Mauritius's financial sector; b) it supports Mauritius's pursuit of becoming an international financial center by providing a modern payment system mechanism; and c) it reinforces Mauritius's international standing by giving domestic regulators a powerful capability to monitor financial transactions. The last point became very important given the recent world-wide emphasis on anti-money laundering and prevention of financing of terrorism. The recent FSAP noted the importance of having systems to combat money laundering and terrorist financing. A real-time modern payment system would facilitate compliance with international norms and standards in this regard and enhance the international legitimacy of Mauritius financial system. Therefore, output of this component was highly relevant to specific objectives of the project and the country's current developmental goals.

The project's payment system component was implemented in record time and without problems. The system has been working as well as any such system in developed countries since its installation. This system has attracted significant attention from other African countries as a number of delegations visited Mauritius to observe the functioning of MACSS as well as to discuss the implementation process. Experience gained in implementing this component enabled the Bank of Mauritius to take a leading role in SADC's regional payment system initiative.

The implementation success was mainly due to the design of this component. The main features of this design were: a) simplified procurement process; b) increased accountability of vendors; and c) provision of technical assistance to Bank of Mauritius during the implementation process. In order to simplify procurement process and ensure highest degree of accountability of vendors as well as provision of technical support to Bank of Mauritius, a "turn-key" delivery approach was adopted. With this approach a single contractor was chosen to deliver, install and test essential system software, and train and assist Bank of Mauritius's technical staff. In addition, Bank of Mauritius agreed to use World Bank's reimbursable technical assistance to supervise the installation process.

Government Debt and Cash Management. This component aimed to: a) identify existing problems in managing government debt; b) create an awareness of problems related to managing government among key institutions and policy makers; c) seek out options to establish modern

debt management systems; d) determine the most appropriate option for Mauritius and prepare a strategy to implement it; and e) create an institutional framework to implement the desired strategy. All of these objectives were realized and this component is rated as "*Satisfactory*".

The inefficiency in managing government debt and its implications for fiscal and monetary policies as well as financial sector development were largely unnoticed in Mauritius prior to this project. Moreover, the Ministry of Finance had no specific and explicit instrument to identify and minimize the risks in managing government debt and corresponding costs. Various debt management related data were kept by different departments and institutions, and no analytical work regarding risk and cost implications of the public debt portfolio was being conducted. Consequently, policy makers did not have the objective of overhauling the government's debt management systems on their agenda. Neither the Fund nor the Bank had paid much attention to this issue prior to this project.

The sector work which was carried out during preparation stage of the project and subsequent discussions laid out the extent of the problems related to public debt management in Mauritius. It was demonstrated that the existing debt management systems had serious conflicts of interest between monetary and fiscal policy objectives. The existing system - which relied on the central bank treasury instruments - placed the entire burden of monetary policy on fiscal balances. Short-term interest rate and exchange rate targets ignored the efficiency of debt management and the longer term capital market development objective. As a result, excessive treasury bills with shorter term maturity were being issued and government carried excessive non-renumerated balances with the Central Bank.

This component facilitated a comprehensive review of the existing debt and cash management systems in Mauritius during the first stage. All the key public and private institutions and policy makers were involved in this review process. In addition, this component provided extensive information on best practices from around the world to key policy makers and stake holders. In the light of this extensive information, inherent inefficiencies in the current system of managing government debt were highlighted. Consequently, the project started and facilitated a dialogue between the Ministry of Finance and the Bank of Mauritius on their respective roles in managing government debt and cash. The key outcome of these discussions was the understanding of conflicting roles and interest between the implementation of monetary and fiscal policies. A formal mechanism (in the form of debt management steering committee) to manage these conflicts was set up. The Bank of Mauritius and the Ministry of Finance signed a Memorandum of Understanding regarding the treasury bill issuance process. The Bank of Mauritius also agreed to pay some interest on a part of the government balances which were the result of issuing treasury instruments solely for monetary policy purposes by Bank of Mauritius. This arrangement will continue, perhaps with modifications, until the debt management unit is equipped to take over the process of issuing treasury debt instruments.

The second stage of the component created the institutional framework to establish modern debt management systems. Based on the review of existing systems and best practices around the world, the Government of Mauritius decided to set up a separate department within the Ministry of Finance to manage government's debt. Some staff from the Department of Public Finance and

Accountant General's office were transferred to this newly created department. An external recruitment effort was launched for the director position. The newly established department and the debt management steering committee mentioned above now constitute the institutional framework to build further capacity and establish state-of-the-art public debt management systems. This institutional framework was created after reaching a consensus between the Bank of Mauritius and the Ministry of Finance. Such a consensus, given the starting point, is remarkable and demonstrates the increased appreciation of the issues by key institutions.

Besides creation of the institutional framework, significant amount of work was done to: (i) analyze the existing portfolio of debt; and (ii) prepare computer based data bases for further analytical work. As a result of analytical work, primary risks in managing debt were identified. Also, preliminary benchmarks for maturity structure and currency composition were developed. Developed databases within the debt management unit include: (i) the level, composition and maturity of government debt and the main components; (ii) the level and composition of the foreign currency debt of the Mauritius economy (public and private sector); (iii) nominal and cash values of debt outstanding; (iv) debt interest costs, categorized by borrowing type; (v) auction results; and (vi) major macroeconomic indicators such as GDP, exports, inflation, reserves.

While the project focused on the above activities, fiscal management in general and debt management related issues in particular became the central focus of the Bank's policy dialogue and other operations. The government debt and its management became the central themes of the PERL operation and the recent PER. The FSAP also validated these concerns and identified debt management as a priority area. This component thus succeeded in raising the profile of debt management as a key policy issue at a critical period in time, and created an institutional framework for dealing with it. However, establishing debt management systems is a long term process. Even in more developed countries, the creation of dedicated debt management systems, which are capable of adapting to changing market conditions and new instruments, takes years to develop.

The allocation for study tours for debt management staff was not utilized nor was the allocation for acquisition of hardware and software. This was mainly due to delays in: a) setting up the debt management unit; and b) recruiting staff. Delays such as these are not unusual in countries where government debt was not actively managed. The tours can easily be organized by the Ministry of Finance when the staff of the debt management unit are ready.

Acquisition of computer hardware and software for debt and cash management purposes became unnecessary as Ministry of Finance and the Accountant General's Office provided computers to the newly established debt management office. In addition, Mauritius obtained the newest version of debt recording and monitoring software from the Commonwealth Secretariat free of charge. This software is sufficient for current needs and it was prudent not to purchase more sophisticated systems. IT technology changes rapidly and systems become obsolete in a relatively short time. Well managed institutions make every effort to avoid over-investment in IT. By making a realistic assessment of existing equipment and freely available resources, Mauritius avoided over-investment in this area.

4.3 Net Present Value/Economic rate of return:

n.a

4.4 Financial rate of return:

n.a

4.5 Institutional development impact:

The project made a substantial impact on institutional development in Mauritius. It created sustainable new institutions and redefined existing institutional relations. The payment system component created a well functioning and sustainable automated clearing and settlement system (MACSS). MACSS now has become the main payment system platform where large value transactions are being carried out, and is enabling financial institutions to better manage settlement risk and liquidity. It enhances efficiency of the financial system, and ultimately benefits the real sector by enabling firms and individuals to transfer large sums instantaneously. It provides a powerful macroeconomic management tool to government. With MACSS, government has also an instantaneous link for interacting with financial markets.

The project facilitated the important reform of the government's debt and cash management systems. Mauritius now is in the process of moving responsibility of the issuing of treasury bills from the Bank of Mauritius to the Ministry of Finance. A new department was created in the Ministry of Finance to take over this responsibility as well as actively manage government's debt. This process will undoubtedly help to deepen capital markets and enhance the overall efficiency of the financial sector. In addition to the creation of the new debt management unit, a coordination mechanism between Ministry of Finance and Bank of Mauritius to support a new debt management structure was created. While the new debt management unit is in the process of building its human and technological resources, an interim arrangement was agreed. Under this arrangement, the relationship between the Bank of Mauritius and the Ministry of Finance regarding issuance of Treasury instruments and keeping excess balances has been redefined. The Bank of Mauritius agreed to pay some interest on part of the government balances which were directly a result of treasury bills issued solely for monetary policy purposes.

5. Major Factors Affecting Implementation and Outcome

5.1 Factors outside the control of government or implementing agency:

There were many factors outside the control of government which affected implementation. The majority of these were related to the Payment System component. Performance of the system vendor, failure of system software, failure in getting financial institutions linked to the system, problems in telecommunication systems were among the key factors that could have adversely affected the outcome. All of these factors were mentioned as risk factors in the PAD. These risks were successfully mitigated by: i) selecting a capable vendor and providing close project support to the Bank of Mauritius; ii) defining business requirements and performance criteria well in

advance so that the system software could be sufficiently customized ahead of installation; iii) securing a high level commitment from financial institutions; iv) setting up a committee of chief IT professionals to monitor installation of the system and synchronizing their internal efforts with the installation process at the Bank of Mauritius; and v) closely working with the telecommunication company to set up secure and reliable communication linkages.

Major factors outside of government control regarding the debt and cash management component were mainly related to the government's ability to attract high quality professionals for the debt management unit. It was quite difficult for government to compete with commercial banks in a field where skills are scarce in Mauritius. In order to compete with banks, government showed flexibility in offering contractual agreements with competitive salaries. However, the need to adhere to broader civil service requirements and the uncertainty of the career path in the short-term discouraged many qualified people from applying.

5.2 Factors generally subject to government control:

The following key factors were subject to government control: i) securing close coordination between various governmental entities; ii) ensuring an orderly procurement process; iii) ensuring that the legal and regulatory basis of the payment and settlement system is in place; iv) planning the intra-day facility to financial institutions for liquidity support and introduction of such a facility; v) providing necessary environment and support to consultants and vendors; vi) establishing a dialogue with financial institutions and the private sector on project's goals and creating a high degree of awareness; vii) allowing sufficient discussion and debate on various options with the key stakeholders and providing effective leadership in creating an atmosphere of collective ownership of the project. The Ministry of Finance and the Bank of Mauritius were very successful in mitigating risks associated with these.

5.3 Factors generally subject to implementing agency control:

The project's implementing agencies were the Ministry of Finance and Bank of Mauritius. Section 5.2 above covers this topic.

5.4 Costs and financing:

The project's main structure has not been changed. However, a part of the loan was cancelled due to: i) savings as a result of competitive bidding for the payment system component; ii) utilization of software provided by the Commonwealth Secretariat for debt management and using existing computers in Ministry of Finance and the Accountant General Office; and iii) canceling of study tours abroad.

6. Sustainability

6.1 Rationale for sustainability rating:

The project's sustainability is rated *highly likely*. MACSS has already become the main payment system mechanism in Mauritius. All the key stakeholders, government, the Bank of Mauritius and financial institutions, are now relying on MACSS as their main vehicle for large value

transactions. The Bank of Mauritius and financial institutions have developed sufficient capacity to sustain operations of MACSS and Mauritius is offering its capacity in this respect to other SADC countries. There is no doubt that the system will continue to perform at current levels of efficiency for the foreseeable future. More importantly, the capacity created is capable of updating the system as the environment changes.

Debt management efforts will also continue in the future as the debt management unit has now become an official department of the Ministry of Finance. Moreover, Government has already demonstrated that it wants to continue to receive state-of-the-art advice in this field and has asked an internationally recognized expert who was involved in the second stage consultancy to continue to provide advice after the project is closed. The agreement between the Ministry of Finance and the Bank of Mauritius regarding excess treasury issues, and treatment of resulting government balances with the Bank of Mauritius is a good indication that the nature of the debt management process has drastically changed in Mauritius.

6.2 Transition arrangement to regular operations:

n.a

7. Bank and Borrower Performance

Bank

7.1 Lending:

The Bank's performance during the lending process was *satisfactory*. Extensive analysis of needs was conducted during the preparation stage of the project. An intensive dialogue with the financial institutions took place. A careful evaluation of available options was made. A technical analysis of existing debt and cash management arrangements was done. Lessons from past experiences were also considered. As a result of this, the project was designed in such a way that it ensured a speedy installation of a modern real-time gross settlement while operational flexibility for the debt and cash management component was built in. Project risks were carefully identified and mitigation factors were outlined in the project's appraisal document. Noting the need for close supervision of implementation of the payments system component, significant advance planning was made to ensure necessary and timely project support.

7.2 Supervision:

The supervision of the project was *satisfactory*. The project contained an innovative supervision arrangement. Bank of Mauritius entered into a reimbursable technical assistance arrangement with IBRD. Under this arrangement, IBRD provided technical expertise and project support to monitor installation of the payments system and to facilitate dialogue between Bank of Mauritius, vendor and financial institutions. This arrangement was the key to the success of the payment system component.

The debt and cash management component was a difficult and sensitive undertaking as it required fundamental changes to the arrangements for the implementation of monetary policy. Supervision

was focused on keeping the forward momentum and making sure that all key actors reached the same long term vision. Implementation of this component had to be slowed down during the elections. This was necessary as the key decisions such as creation of a new department and hiring of senior staff inevitably required political commitment. In order to secure high level political commitments, it was prudent not to preempt options of the new government and to wait for the political process to take its course.

It should also be noted that the same Task Team Leader who prepared the project supervised it from beginning to the end.

7.3 Overall Bank performance:

The Bank's overall performance was rated satisfactory. Activities leading up to the project's preparation and implementation were relevant. The Country Team provided sufficient resources for these activities. The Sector Manager and the Country Director provided necessary support to the Task Team. The Task Team followed the implementation process in a very cooperative atmosphere with the Borrower. Close and cooperative working relations with the Borrower was one of the key factors that created the foundation for the PERL. The disbursement process was smooth and no major problems were encountered.

Borrower

7.4 Preparation:

Given the limited capacity that existed in the payment systems and debt management areas, the Bank's technical staff provided substantial support for the preparation. The Bank of Mauritius and the Ministry of Finance provided all the data that were needed for analytical purposes. They also facilitated dialogue with financial institutions and the private sector.

7.5 Government implementation performance:

Ministry of Finance and the Bank of Mauritius worked closely with the Bank's Task Team during the implementation process. They created an excellent environment which was frank and mutually respectful for the implementation of the project and monitoring its progress. Procurement was carried out smoothly and transparently. The Borrower observed IBRD's guidelines and the provisions of the project's legal agreement. All the necessary actions to implement the project were taken by the Ministry of Finance and the Bank of Mauritius.

7.6 Implementing Agency:

Borrower is the implementing agency. See Sections 7.4 and 7.5 above.

7.7 Overall Borrower performance:

The Borrower's overall performance is rated satisfactory. The Borrower maintained sufficient commitment to the project from the very beginning. The Borrower followed through the implementation plan and took necessary actions. The delays encountered in debt and cash management were due to unforeseen circumstances. Nonetheless, the Borrower maintained the

direction with respect to debt and cash management under significantly different political circumstances. Thus, demonstrating that efficient debt and cash management systems are essential to macroeconomic management and independent of the political power structure.

8. Lessons Learned

The project offers several valuable lessons:

- High level commitment on the part of Government, Central Bank and financial institutions is essential for setting up systemically important payment systems;
- Successful payment system initiatives require careful and detailed advance planning with participation of the key players;
- Selecting a reputable vendor and proven systems are crucial for systemically important payment systems;
- Simplifying procurement process and making key vendor(s) responsible for the functioning of the payments system are essential;
- Making arrangements for close project support and supervision of system installation are crucial in environments where technical resources are not readily available;
- Financial institutions must have sufficient competence in their IT departments and their internal systems must be made ready to utilize a real-time gross settlement system;
- Legal and regulatory underpinnings of payment system must be established ahead of the installation of the system;
- Introduction of intra-day liquidity support facility is crucial for large value real time gross settlement systems;
- A cooperative environment where vendor(s) staff, the Central Bank's IT department and IT professionals of financial institutions work in harmony must be created. Everybody must be conscious of the fact that the system could not work without a high degree of commitment and care of everyone involved;
- Setting up state-of-the art government's debt and cash management systems is a long term process and expectations and targets must be modest in the short-term;
- Reforming the process of government's debt management require a commonly shared vision by agents of both fiscal and monetary policy;
- Establishing government debt management systems requires availability of minimum skills to get the system initiated in the first place;
- Investment in IT platform must be synchronized with the needs;
- Investment in IT systems that are beyond the current needs and the capacity of debt management staff must be avoided;
- A high level frank and trusting environment for policy dialogue between key actors is essential in reforming government's debt management systems;
- The process of reforming government's debt management systems must be cognizant of political dynamics;
- Debt management systems should be reformed without causing any disturbance in financial markets in open market economies;
- Continuity in Task Team Leadership is essential for successful implementation of projects. The continuity becomes especially important for projects that aim to reform institutions and institutional relations. These reforms require establishment of a mutually trusting

environment which can only be built over time.

9. Partner Comments

(a) Borrower/implementing agency:

Draft ICR was reviewed by the Government. The Government indicated they are in agreement with the ICR's findings. Written comments have not been provided yet. However, Government wrote to the Vice President for Financial Sector and expressed their appreciation for the project's success in installing MACSS. This letter is in project files.

(b) Cofinanciers:

n.a

(c) Other partners (NGOs/private sector):

n.a

10. Additional Information

Annex 1. Key Performance Indicators/Log Frame Matrix

Outcome / Impact Indicators:

Indicator/Matrix	Projected in last PSR ¹	Actual/Latest Estimate
a) Large Value transactions settled real time and improved liquidity management;	Yes	Yes
b) better managed government cash position and debt stocks.	Yes	Yes

Output Indicators:

Indicator/Matrix	Projected in last PSR ¹	Actual/Latest Estimate
Establishment of a RTGS system. RTGS is functioning with 99.5 % efficiency RTGS is handling MUR 1 billion daily	RTGS system was established	The RTGS system was swiftly installed. The results have been a success to the point where MT has become a model for other countries that are interested in an RTGS system. RTGS is functioning with 99.99% efficiency RTGS is handling more than MUR 1.5 billion daily
a) Establishment of a debt management office; b) better management of government's cash position.	Debt Management Unit was created RTGS is being used by Government for payment and collection purposes	The Government has established a new Debt Management Unit within the Ministry of Finance Preliminary benchmarks for maturity and currency composition were developed Key debt management databases are created Key risk factors are identified. BOM started paying interest on government cash balances BOM stopped issuing short term treasury instruments and fiscal costs of such instruments are now minimized RTGS provides fast and reliable mechanism for government to make payments and collect revenues

¹ End of project

Annex 2. Project Costs and Financing

Project Cost by Component (in US\$ million equivalent)

Component	Appraisal Estimate US\$ million	Actual/Latest Estimate US\$ million	Percentage of Appraisal
1. Payment Systems			
A. Application Development and Project Support	1.20	1.20	100
B. Telecom and Processing Equipment including embedded system software	1.60	0.18	11
2. Debt and Cash Management			
A. Cash Mgmt. Consulting	0.10	0.10	100
B. Debt Mgmt. Consulting	0.19	0.19	100
C. Training	0.10	0.00	0
D. MOF System Development	0.88	0.68	77
3. Contingencies	0.63	0.63	100
Total Baseline Cost	4.70	2.98	
Total Project Costs	4.70	2.98	
Front-end fee	0.05	0.05	
Total Financing Required	4.75	3.03	

Project Costs by Procurement Arrangements (Appraisal Estimate) (US\$ million equivalent)

Expenditure Category	Procurement Method ¹			N.B.F.	Total Cost
	ICB	NCB	Other ²		
1. Works	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
2. Goods	2.00 (1.60)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	2.00 (1.60)
3. Services	0.00 (0.00)	0.00 (0.00)	0.12 (0.10)	3.96 (3.00)	4.08 (3.10)
4. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
5. Front-end fee	0.00 (0.00)	0.00 (0.00)	0.05 (0.05)	0.00 (0.00)	0.05 (0.05)
Total	2.00 (1.60)	0.00 (0.00)	0.17 (0.15)	3.96 (3.00)	6.13 (4.75)

Project Costs by Procurement Arrangements (Actual/Latest Estimate) (US\$ million equivalent)

Expenditure Category	Procurement Method ¹			N.B.F.	Total Cost
	ICB	NCB	Other ²		
1. Works	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
2. Goods	0.00 (0.00)	0.28 (0.22)	0.00 (0.00)	0.00 (0.00)	0.28 (0.22)
3. Services	0.00 (0.00)	0.00 (0.00)	2.55 (2.26)	0.00 (0.00)	2.55 (2.26)
4. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
5. Front-end fee	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Total	0.00 (0.00)	0.28 (0.22)	2.55 (2.26)	0.00 (0.00)	2.83 (2.49)

^{1/} Figures in parenthesis are the amounts to be financed by the Bank Loan. All costs include contingencies.

^{2/} Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.

Project Financing by Component (in US\$ million equivalent)

Component	Appraisal Estimate			Actual/Latest Estimate			Percentage of Appraisal		
	Bank	Govt.	CoF.	Bank	Govt.	CoF.	Bank	Govt.	CoF.
PAYMENT SYSTEM	2.80			2.02			72.1		
Application Development and Project Support	1.20						0.0		
Telecom and Processing Equipment including embedded system software	1.60						0.0		
DEBT AND CASH MANAGEMENT	1.90			0.97			51.1		
Cash Mgmt. Consulting	0.10						0.0		
Debt Mgmt. Consulting	0.19						0.0		
Training	0.10						0.0		
MOF System Development	0.88						0.0		
CONTINGENCIES	0.63						0.0		

Annex 3. Economic Costs and Benefits

Project's benefits are very difficult to quantify. However the following points might be helpful in bringing an analytical perspective to the benefits:

- a) The RTGS system which cost about \$2.5 million is handling about MUR 1.5 billion (about \$55 million) a day. Total value handled represents significant reduction of settlement risks for the Bank of Mauritius (a reduction of risk equivalent to 5% of BOM's total assets per day)
- b) Commercial Banks no longer use the collateral fund (which should have been about \$0.3 billion) to cover settlement risk at the Port Louis Clearing House. So, an amount about 10 times of the cost of RTGS is available for commercial purposes within the banking system indicating substantial improvement in liquidity management.
- c) Government is now earning interest on excess treasury bills issued by the Bank of Mauritius. The yearly interest will be about MRU 750 million. In the long run, a reduction of 30 basis points on overall debt which is about MRU .5 billion a year is expected. In addition, substantial reduction in risks is expected.

Annex 4. Bank Inputs

(a) Missions:

Stage of Project Cycle	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc.)		Performance Rating	
	Month/Year	Count	Specialty	Implementation Progress
Identification/Preparation 07/24/1999	3	TTL(1), R. Keppler (payment system), D. Wilton (debt management)		
Appraisal/Negotiation 10/15/1999	3	TTL (1), R. Keppler (payment system), D. Wilton (debt management)		
12/27/1999				
Supervision				
07/18/2000	1	TTL (1)	S	S
11/25/2000	1	TEAM LEADER FINANCIAL (1)	S	S
07/01/2000	1	TTL (1)	S	S
11/16/2001	1	TASK TEAM LEADER (1)	S	S
05/11/2002	1	TTL, FINANCIAL SECTOR (1)	S	S
12/21/2002	1	TTL (1)	S	S
ICR 11/30/2003	1	TTL (1), FINANCIAL SECTOR		

(b) Staff:

Stage of Project Cycle	Actual/Latest Estimate	
	No. Staff weeks	US\$ ('000)
Identification/Preparation		
Appraisal/Negotiation		
Supervision		
ICR		
Total		

Annex 5. Ratings for Achievement of Objectives/Outputs of Components

(H=High, SU=Substantial, M=Modest, N=Negligible, NA=Not Applicable)

	<u>Rating</u>				
<input checked="" type="checkbox"/> <i>Macro policies</i>	<input checked="" type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input type="radio"/> <i>NA</i>
<input checked="" type="checkbox"/> <i>Sector Policies</i>	<input checked="" type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input type="radio"/> <i>NA</i>
<input checked="" type="checkbox"/> <i>Physical</i>	<input checked="" type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input type="radio"/> <i>NA</i>
<input checked="" type="checkbox"/> <i>Financial</i>	<input checked="" type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input type="radio"/> <i>NA</i>
<input checked="" type="checkbox"/> <i>Institutional Development</i>	<input checked="" type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input type="radio"/> <i>NA</i>
<input checked="" type="checkbox"/> <i>Environmental</i>	<input type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input checked="" type="radio"/> <i>NA</i>
 <i>Social</i>					
<input checked="" type="checkbox"/> <i>Poverty Reduction</i>	<input type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input checked="" type="radio"/> <i>NA</i>
<input checked="" type="checkbox"/> <i>Gender</i>	<input type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input checked="" type="radio"/> <i>NA</i>
<input type="checkbox"/> <i>Other (Please specify)</i>	<input type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input checked="" type="radio"/> <i>NA</i>
<input type="checkbox"/> <i>Private sector development</i>	<input checked="" type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input type="radio"/> <i>NA</i>
<input checked="" type="checkbox"/> <i>Public sector management</i>	<input checked="" type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input type="radio"/> <i>NA</i>
<input type="checkbox"/> <i>Other (Please specify)</i>	<input type="radio"/> <i>H</i>	<input type="radio"/> <i>SU</i>	<input type="radio"/> <i>M</i>	<input type="radio"/> <i>N</i>	<input checked="" type="radio"/> <i>NA</i>

Annex 6. Ratings of Bank and Borrower Performance

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HU=Highly Unsatisfactory)

6.1 Bank performance

Rating

- | | | | | |
|---|--------------------------|------------------------------------|-------------------------|--------------------------|
| <input checked="" type="checkbox"/> Lending | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Supervision | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Overall | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |

6.2 Borrower performance

Rating

- | | | | | |
|---|--------------------------|------------------------------------|-------------------------|--------------------------|
| <input checked="" type="checkbox"/> Preparation | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Government implementation performance | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Implementation agency performance | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input checked="" type="checkbox"/> Overall | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |

Annex 7. List of Supporting Documents

Mission Aide Memoires

Loan Agreement

PAD

Consultant reports

