Document of
The World Bank

Report No: ICR00003034

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA-43930)

ON A

CREDIT

IN THE AMOUNT OF SDR 4.90 MILLION
(US$ 7.7 MILLION EQUIVALENT)

TO THE

REPUBLIC OF MALDIVES

FOR A

MALDIVES MOBILE PHONE BANKING PROJECT

June 10, 2014

Finance and Private Sector Development
South Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 20, 2014)

Currency Unit = Maldivian Rufiyaa (Rf)
Rf 1.00 = US$0.065
US$1.00 = Rf 15.35

FISCAL YEAR

January 1–December 31

ABBREVIATIONS AND ACRONYMS

ACH	Automated Clearing House
AML	Anti-Money Laundering
API	Application Programming Interfaces
APL	Adaptable Program Loan
ARCS	Audit Report Compliant Systems
ATM	Automated Teller Machine
BML	Bank of Maldives
CAS	Country Assistance Strategy
C2P	Clear2Pay
CBSL	Central Bank of Sri Lanka
CFAA	Country Financial Accountability Assessment
CFT	Combating the Financing of Terrorism
CGAP	Consultative Group to Assist the Poor
CMDA	Capital Market Development Authority
CPI	Consumer Price Index
CRIB	Credit Information Bureau
CTI	Cheque Truncation and Imaging
Dhiraagu	Dhivehi Raajjeyge Gulhun Pvt Ltd
DO	Development Objective
DR	Disaster Recovery
EDGE	Enhanced Data Rates for GSM Evolution
EFT	Electronic Funds Transfer
EIRR	Economic Internal Rate of Return
EMD	Emerging Markets Digital
EOI	Expression of Interest
FIRR	Financial Internal Rate of Return
FIU	Financial Intelligence Unit
FM	Financial Management
GDP	Gross Domestic Product
GOM	Government of Maldives
GSM	Global Systems for Mobile Communication
HSBC	Hong Kong and Shanghai Banking Corporation

IBRD	International Bank for Reconstruction and Development
ICA	Investment Climate Assessment
ICB	International Competitive Bidding
ICR	Implementation Completion Report
IDA	International Development Association
IFC	International Finance Corporation
IFR	International Financial Reporting
IMF	International Monetary Fund
IP	Implementation Progress
KIS	Keep it Simple
LIL	Learning and Innovation Loan
LOA	Loans Department
LVFT	Large-Value Funds Transfer
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MFLC	Maldives Finance Leasing Company
MFS	Mobile Financial Systems
MIC	Middle Income Status
MIPS	Maldives Interoperable Payments System
MMA	Maldives Monetary Authority
MNO	Mobile Network Operators
MOFT	Ministry of Finance and Treasury
MPBP	Mobile Phone Banking Project
MRTGS	Maldives Real Time Gross Settlement
MOU	Memorandum of Understanding
MPS	Mobile Payment System
NDB	National Development Bank
NDP	National Development Plan
NPV	Net Present Value
O&M	Operation and Maintenance
PAC	Project Advisory Committee
PAD	Project Appraisal Document
PAS	Public Accounting System
PCI	Payment Card Industry
PDO	Project Development Objectives
PFMS	Public Financial Management System
PIN	Personal Identification Number
POS	Point of Sale
PPF	Project Preparation Facility
PRSP	Poverty Reduction Strategy Paper
PSC	Policy Steering Committee
Rf	Maldivian Rufiyaas
RTGS	Real Time Gross Settlement
SBD	Standard Bidding Document
SIL	Specific Investment Loan
SIM	Subscriber Identity Modules

SME	Small and Medium Enterprises
SMS	Short Message Services
SOE	State-Owned Enterprise
SOV	Store-Of-Value
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TAM	Telecom Authority of Maldives
TEB	Tender Evaluation Board
TEC	Technical Evaluation Committee
TTL	Task Team Leader
UAT	User Acceptance Testing
USSD	Unstructured Supplementary Service Data
WAP	Wireless Applications Protocol

Vice President:	Philippe H. Le Houerou
Country Director:	Francoise Clottes
Sector Manager:	Henry K. Bagazonzya
Project Team Leader:	Sriyani M. Hulugalle, Stephen Rasmussen
ICR Team Leader:	Thyra A. Riley
ICR Primary Author:	Shamsuddin Ahmad

REPUBLIC OF MALDIVES
Mobile Phone Banking Project

CONTENTS

A. Basic Information			
Country:	Maldives	Project Name:	Maldives Mobile Phone Banking Project
Project ID:	P107981	L/C/TF Number(s):	IDA-43930
ICR Date:	04/28/2014	ICR Type:	Core ICR
Lending Instrument:	SIL	Borrower:	
Original Total Commitment:	XDR 4.90M	Disbursed Amount:	XDR 3.92M
Revised Amount:	XDR 3.92M		
Environmental Category: C			
Implementing Agencies: Maldives Monetary Authority			
Cofinanciers and Other External Partners:			

B. Key Dates				
Process	**Date**	**Process**	**Original Date**	**Revised / Actual Date(s)**
Concept Review:	07/12/2007	Effectiveness:	09/26/2008	09/26/2008
Appraisal:	12/03/2007	Restructuring(s):		05/08/2012 12/23/2013
Approval:	04/17/2008	Mid-term Review:	04/15/2010	10/26/2010
		Closing:	06/30/2012	12/31/2013

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Unsatisfactory
Risk to Development Outcome:	High
Bank Performance:	Moderately Unsatisfactory
Borrower Performance:	Unsatisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	**Ratings**	**Borrower**	**Ratings**
Quality at Entry:	Unsatisfactory	Government:	Unsatisfactory
Quality of Supervision:	Moderately Unsatisfactory	Implementing Agency/Agencies:	Unsatisfactory
Overall Bank Performance:	Moderately Unsatisfactory	**Overall Borrower Performance:**	Unsatisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	Indicators	QAG Assessments (if any)	Rating
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Unsatisfactory		

D. Sector and Theme Codes		
	Original	Actual
Sector Code (as % of total Bank financing)		
Banking	7	12
Central government administration	7	10
Payments, settlements, and remittance systems	86	78
Theme Code (as % of total Bank financing)		
Other Financial Sector Development	67	64
Regulation and competition policy	33	36

E. Bank Staff		
Positions	At ICR	At Approval
Vice President:	Philippe H. Le Houerou	Praful C. Patel
Country Director:	Francoise Clottes	Alastair J. McKechnie
Sector Manager:	Henry K Bagazonzya	Simon C. Bell
Project Team Leader:	Sriyani M. Hulugalle	Sriyani M. Hulugalle
ICR Team Leader:	Thyra A. Riley	
ICR Primary Author:	Shamsuddin Ahmad	

F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document**)**
The objective of the project is to significantly increase the use of banking system transactions for effecting or receiving payments for labor, goods and services nationwide through the implementation of a national inter-operable payments system that facilitates access to financial services and allows users access to their bank account using any mobile phone operator and cashing through any banking agent.

Revised Project Development Objectives (as approved by original approving authority)

None

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	A large proportion of the adult population will have a phone account (more than 75% of adults will have a phone account by the end of the project period.)			
Value quantitative or Qualitative)	0 percent	75 percent		0 percent
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. Nobody has a phone account as the Mobile Payment System could not be operationalized.			
Indicator 2 :	A large proportion of the adult population will have a regular bank account that can be accessed from their mobile phone account (more than 70% of adults will have a regular bank account by the end of the project period).			
Value quantitative or Qualitative)	40 percent	70 percent		Only those customers of the Bank of Maldives that have a smart phone can access their Bank of Maldives account from their mobile phone using the internet.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. The baseline figure represents the percentage of the population with bank accounts in December 2007, which were to be linked automatically to the MPS. As the MPS could not be operationlized, these accounts could not be linked.			
Indicator 3 :	A large share of salary and supply chain payments will be effected electronically directly into people's bank accounts that in turn can be accessed through mobile phone accounts (more than 50% of fishing boat-load purchases by processing plants).			
Value quantitative or Qualitative)	40 percent	70 percent		All government salaries and pension payments are made electronically directly into the beneficiaries' bank accounts through

				the Automated Clearing House. However, most of these accounts cannot be accessed through mobile phones.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. The Mobile Payment System could not be operationalized.			
Indicator 4 :	The total amount of cash in circulation (M1) will decline as more transactions are made electronically (the amount of cash in circulation will begin to decline in the second year after the mobile payments system becomes fully functional).			
Value quantitative or Qualitative)	MVR 1,049 million	MVR 1,000 million		MVR 3,151.3 million as in January 2014.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. Cash in circulation has not declined as the Mobile Payment System is not operational.			
Indicator 5 :	An appropriate legal and regulatory system will be in place for mobile phone transactions (a general framework regulation covering all necessary topics will be in place by the time transactions in the system begin).			
Value quantitative or Qualitative)	No regulation in place.	Payments System Law; Anti-Money Laundering Law; Electronic Fund Transfer Act; and Consumer Protection Act, are in effect.		Payment System Regulation; Anti-Money Laundering Regulation; issued.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. None of the planned and drafted laws have been passed. MMA has issued only two regulations.			
Indicator 6 :	Everyone with a phone account will be able to deposit and withdraw reasonable amounts of cash from their accounts anywhere in the country (all populated islands will have at least one agent with cash in/cash out facilities by the end of the project.)			
Value quantitative or Qualitative)	0 percent of the population can deposit and withdraw cash from their phone accounts.	100 percent.		0 percent.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. Nobody can cash in/cash out using mobile phones as the Mobile Payment System is not operational.			

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Percentage of population with a mobile phone account.			
Value (quantitative or Qualitative)	0 percent.	75 percent		0 percent
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. The Mobile Payment System could not be operationalized.			
Indicator 2 :	Percentage of populated island with a local agent at which mobile phone accounts can be opened.			
Value (quantitative or Qualitative)	0 percent.	100 percent.		0 percent.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. Local agents could not be appointed as the MPS could not be operationalized.			
Indicator 3 :	Percentage of adult population with a regular bank account.			
Value (quantitative or Qualitative)	40 percent.	70 percent.		Almost 100 percent.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Achieved. The Bank of Maldives has 211,457 bank accounts of individual Maldivians, which is more than 100% of the adult population.			
Indicator 4 :	Percentage of salaries paid by resort owners electronically.			
Value (quantitative or Qualitative)	20 percent	70 percent		0 percent.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. The baseline figure represents the percentage of resort owners that would have automatically moved to MPS. However, it did not happen.			
Indicator 5 :	Percentage of fishing boat-load purchases by processing plants and official trading companies paid for electronically.			
Value (quantitative or Qualitative)	Less than 5 percent	60 percent		Less than 5 percent.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved. No payments can be effected through mobile phones.			

Indicator 6 :	Amount of cash in circulation.			
Value (quantitative or Qualitative)	MVR1,049 million	MVR1,000 million		MVR 3, 151.3 million as on January 31, 2014.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved as the MPS could not be operationalized.			
Indicator 7 :	A general framework regulation covering all necessary topics is developed and adopted.			
Value (quantitative or Qualitative)	Does not exist	Framework in place.		Two out of four regulations were issued in 2011: Payments system regulation; and AML/CFT regulation. The other two on Consumer Protection and Agent network have not been issued.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Partially achieved.			
Indicator 8 :	Detailed implementing regulations are completed.			
Value (quantitative or Qualitative)	Do not exist.	Completed and in use.		Four regulations were drafted and two have been issued.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Partially achieved.			
Indicator 9 :	Percentage of populated islands with a local agent with cash in/cash out facilities.			
Value (quantitative or Qualitative)	0 percent.	100 percent.		0 percent.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved.			
Indicator 10 :	Number of customers who report that they often cannot deposit/withdraw the amounts they need when they are at their local agent's store.			
Value (quantitative or Qualitative)	0	Less than 100 complaints per month.		0

Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved.			
Indicator 11 :	A promotion/public education campaign is designed and implemented.			
Value (quantitative or Qualitative)	Does not exist	Completed.		Not completed and not implemented.
Date achieved	12/31/2007	12/31/2013		03/20/2014
Comments (incl. % achievement)	Not achieved.			

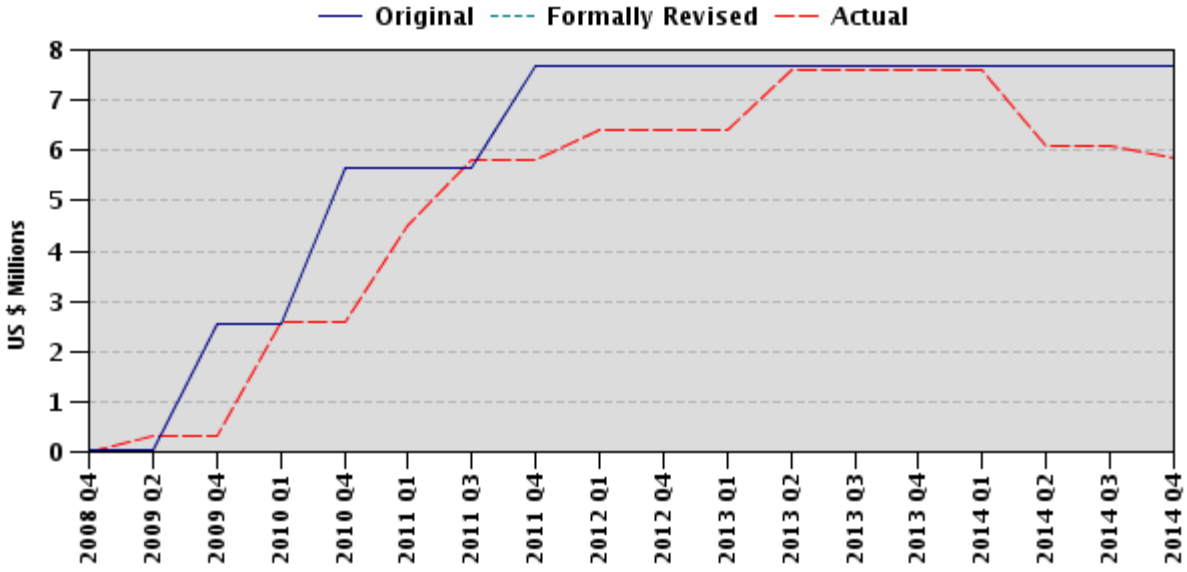
G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	06/25/2008	Satisfactory	Satisfactory	0.00
2	12/22/2008	Satisfactory	Satisfactory	0.30
3	03/04/2009	Satisfactory	Satisfactory	0.30
4	06/30/2009	Moderately Unsatisfactory	Moderately Unsatisfactory	0.30
5	11/09/2009	Satisfactory	Satisfactory	2.60
6	03/08/2010	Satisfactory	Satisfactory	2.60
7	12/04/2010	Satisfactory	Moderately Satisfactory	4.51
8	07/11/2011	Satisfactory	Moderately Satisfactory	5.83
9	02/11/2012	Satisfactory	Moderately Satisfactory	6.39
10	07/22/2012	Moderately Satisfactory	Moderately Satisfactory	6.39
11	12/22/2012	Moderately Unsatisfactory	Moderately Unsatisfactory	7.60
12	04/08/2013	Unsatisfactory	Unsatisfactory	7.60
13	11/01/2013	Unsatisfactory	Unsatisfactory	7.60

H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
05/08/2012		S	MS	6.39	Extension of Closing Date to December 31, 2013.
12/23/2013		U	U	6.10	Cancellation of an amount of the Credit equal to US Dollars 1.50 million.

I. Disbursement Profile



1. Project Context, Development Objectives, and Design

1.1 Context at Appraisal

Country and Sector Background:

1.1.1. The 2006 Investment Climate Assessment (ICA) of Maldives identified the lack of access to finance as the single largest impediment to private-sector development, followed by cost of financing. This was different from the case of other South Asian countries, where a lack of infrastructure is usually the main obstacle to development in this sector. Access to finance poses challenges in the Maldives given the country's geographical dispersion over an area of 90,000 square kilometers, 99.5 percent of which is water; 300,000 residents live on 198 scattered islands in 26 atolls, and 60 percent of the inhabited islands have fewer than 1,000 residents. In this context, covering such a vast territory with traditional branch networks of banks poses a particular challenge. Moreover, only one domestic bank provided commercial banking services to the entire nation through its 25 branches, eight mobile units, and 36 active ATMs, of which only 20 were located outside the capital, Male. The branches of three South Asian state-owned commercial banks as well as that of an international bank operated out of Male. As a result, only 40 percent of Maldivians had a bank account, with most customers located in Male (65 percent). At that time, government salaries and social transfers were all made in cash, and the universal use of cash meant that citizens' basic earnings were vulnerable to loss, theft, and natural disasters such as the tsunami that struck Maldives in December 2004. Moreover, sending money from one island to another was expensive, time consuming, and risky.

1.1.2. ***Project Background:*** The Mobile Phone Banking Project was designed primarily to benefit the common people living and working in the atolls by sparing them the burden of traveling great distances, facing security risks, and waiting in long queues at bank branches to collect payments (salaries, pensions, social transfers or sales proceeds), pay bills, or transfer payments to relatives, friends, or suppliers. Moreover, the project aimed to: (i) reduce the number and amounts of cash transactions made by individuals, businesses, and industries; (ii) enable banks to extend the outreach of their services, provide more products, and reduce transactions costs; and (iii) reduce the cost to government and to the banking system of printing, storing, and distributing cash.

1.1.3. To achieve these aims, the Consultative Group to Assist the Poor (CGAP) and the World Bank ambitiously designed a totally unique, interoperable Mobile Payment System (MPS) that connected all the banks and all the mobile network operators to the Real Time Gross Settlement (RTGS) system, as well as to the retail small value settlement system (through the Automated Clearing House – ACH). Further, the system was to be managed by the banking regulator that would also have had to manage the country-wide network of cash-in/cash-out agents. Given the numerous both bank and non-bank institutions that would have to successfully interoperate, the huge differences in their technology platforms, capacities, and knowledge capabilities, as well as in the regulatory and legal sophistication of their respective owners, this project appears, with

hindsight, to have been a very high risk pilot. Furthermore, to date, no country in the world has implemented such a complex system.

1.1.4. A principal risk of successful implementation lay in the need for the diverse group of participants to remain steadfast in their commitment to the project's and the country's overall objectives and to carefully coordinate and cooperate under the leadership of the Maldives Monetary Authority.

Rationale for World Bank assistance:

1.1.5. The government of Maldives requested that the World Bank design a project extending financial services to all the people in Maldives in a cost-effective manner. The idea was proposed by the government representatives who attended a regional microfinance workshop sponsored by the World Bank in December 2005, in which they were exposed for the first time to mobile banking systems in use in other parts of the world. The government's request was first taken up by CGAP, which in 2006 began to work with the Maldives Monetary Authority (MMA) to develop a concept and proposal that formed the basis for the project. Moreover, CGAP came forward to design the project using the experience and expertise of its technology team, which had carried out considerable work on branchless banking and mobile phone banking. As a result, in 2006, CGAP and MMA developed a vision document and project framework entitled "Developing a National Banking and Payment System with Mobile Phones." That document provided a basis for the design and development of this project.[1]

1.1.6. Since the request was in line with the 2007 Country Assistance Strategy (CAS), which highlighted the importance of improving access to finance as part of an effort to enhance private-sector development, this project was considered appropriate for International Development Association (IDA) funding. It was furthermore seen to contribute to the goals described under CAS pillar 1 on economic governance and investment, specifically with respect to creating an environment conducive for growth, generating employment, enhancing trade, supporting businesses, and building competitive industries.

1.2 Original Project Development Objectives (PDO) and Key Indicators (*as approved*)

1.2.1. The objective of the project was to significantly increase the use of banking system transactions for effecting or receiving payments for labor, goods, and services nationwide through the implementation of a national, interoperable payment system that

[1] "Developing a National Banking and Payment System with Mobile Phones – Vision Document and Project Framework," CGAP and MMA, Maldives, December 2006. Authored by Gautam Ivatury (CGAP technology specialist), Bill Donges (Payment Systems and Banking Technology- CGAP consultant), Peter Goldfinch (Mobile Phone Payment Systems - CGAP consultant), Keith Smith (Banking and Payment Systems Regulations - CGAP consultant), and Jenny Hoffman (Mobile Phone Banking - CGAP consultant). Ibraheem Naeem (MMA) made important contributions.

facilitates access to financial services and allows users access to their bank account using any mobile phone operator and receiving cash (cashing out) through any banking agent.

Key Indicators

1.2.2. The key indicators were:

- A large proportion of the adult population will have a phone account (>75 percent of adults will have a phone account by the end of the project period).
- A large proportion of the adult population will have a regular bank account that can be accessed from their mobile phone account (>70 percent of adults will have a regular bank account by the end of the project period).
- A large share of salary and supply chain payments will be effected electronically, directly into customers' bank accounts, which in turn can be accessed through mobile phone accounts.
- The amount of cash in circulation (M1) will decline as more transactions are made electronically (the amount of cash in circulation will begin to decline in the second year after the MPS becomes fully functional).
- An appropriate legal and regulatory system will be in place for mobile phone transactions (a general framework regulation covering all necessary topics will be in place by the time transactions in the system begin).
- Everyone with a phone account will be able to deposit and withdraw reasonable amounts of cash from their accounts anywhere in the country.

1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification

1.3.1. The Project Development Objective was not revised.

1.4 Main Beneficiaries

1.4.1. The group that was intended to benefit the most from this project was the general population living and working in the atolls. The population's remoteness from formal bank retail outlets (branches or ATMs) forced people to carry, hold, and exchange significant amounts of cash. They needed to travel large distances and subsequently withstand long queues at bank branches to collect payments (including salaries and proceeds of fish stock sales), pay bills, or transfer payments to relatives, friends, or suppliers. Beyond the transportation costs and the time involved, there were safety and security concerns. This situation also reduced financial savings, as people were more likely to bring their entire value of wages earned home and carry larger precautionary cash balances with them. As such, the main expected benefit of the project was that universal access to financial services would be provided. This would reduce the vulnerability of people living on remote islands, especially women in fragile environments with limited access to financial services.

1.4.2. A second group that was expected to benefit from the project were businesses and industries—especially the main industries of tourism and fishing on which the economy

depends—through a reduction in the costs and risks of the prevailing cash-based system. Moreover, financial institutions (particularly banks), were projected to be in a position to extend the outreach of their services to remote islands in every atoll, provide more products, and reduce transaction costs for the ultimate benefit of their clients.

1.4.3. Finally, the government and the banking system were expected to benefit from a reduction in the costs of printing, storing, and distributing cash.

1.5 Original Components (*as approved*)

The project had two main components:

1.5.1. **Component 1 – Create, establish, and operationalize the Maldives Interoperable Payments System (MIPS):** *(US$6.00 million).* The payment system is a single-currency system operating in Maldivian Rufiyaas (Rf) that will be capable of interoperating with all local mobile network operators and integrating all the banks. The system will offer a set of mobile telephone-based accounts that include: (i) mobile payment accounts; (ii) mobile agent accounts; (ii) mobile card accounts; (iii) mobile loyalty; (iv) mobile airtime reseller accounts; and (iv) a customized account type, for introduction of new banking/payment products in the future.

1.5.2. The payment system would enable subscribers to transfer funds to and from bank accounts held in any bank both to and from the telephone-based accounts. The telephone accounts were to be accessible from the handset. New customers would be able to enroll through the mobile handset and withdrawal and deposit functions would be performed by a network of agents. The project aimed at having at least one agent in each of the 200 inhabited islands, 89 resorts, 30 to 40 industrial/agricultural islands, and in Male. Each agent would have a direct contractual relationship with the bank for which he/she performed cash functions. For the purpose of supporting the "Know Your Customer" qualification, the system would be integrated with the National Registration System for validation of subscriber identity during the enrolment process.

1.5.3. The main elements of the MIPS would be the Mobile Payment System (MPS), an RTGS system, an image-enabled ACH system, and an Electronic Funds Transfer (EFT)/Point of Sale (POS) /Automated Teller Machine (ATM) front-end processing system. These elements would be integrated into one single system backed up by a disaster recovery system. This technical solution was intended to provide the simplest possible interface to the banks' existing core banking systems.

1.5.4. **Component 2 – Building an enabling environment and the capacity to support successful mobile phone banking systems – (***US$1.00 million)* Capacity must be built in several areas to ensure that the system would be properly regulated, work for clients, and be well managed. It would be necessary to develop and implement regulations to cover all aspects of the system, as well as build the capacity of regulators to supervise it. To help ensure that people and businesses understood the benefits of the system and adopted and trusted it, a promotion/public education campaign would be conducted. Finally, a mobile phone banking unit would be established under the MMA

that would have the capability to implement and manage MIPS. This unit would be established keeping in mind the longer-term objective of transitioning into a competent, viable MIPS Business Unit after transaction volumes reached a reasonable level.

1.6 Revised Components

1.6.1. The components were not revised.

1.7 Other significant changes

1.7.1. The project was restructured twice during the implementation period:

(i) Extension of Closing Date: The project was restructured on May 8, 2012, to extend the closing date from June 30, 2012, to December 31, 2013, to overcome implementation delays due to political turmoil in the country over the previous few years. The extension was proposed to allow the completion of critical components of the MPS and of the ACH. However, the implementation of both the MPS and the Direct Debit part of the ACH remain incomplete as of March 31, 2014.

(ii) Partial Cancellation of Proceeds: The second restructuring letter was sent to the government on December 23, 2013, to cancel US$1.5 million in un-utilized funds. The project, therefore, closed after disbursing SDR 3.92 million out of SDR 4.90 million (80 percent.)

2. Key Factors Affecting Implementation and Outcomes

2.1. Project Preparation, Design, and Quality at Entry

(including whether lessons of earlier operations were taken into account, whether risks and their mitigations were identified, and the adequacy of participatory processes, as applicable)

2.1.1. **Quality at Entry:** The Minutes of the Quality at Entry Review (QER) indicate that two principal issues were addressed with the project team. First, the peer reviewers and management wanted to be convinced that there is buy in not only from the Maldives Monetary Authority (MMA) but also from other stakeholders including the Ministry of Finance. In addition, some of the participants reiterated that the private sector and the other stakeholders need to be involved in the process from the inception. Second, the project team was requested to update the RIW and also to identify indicators which can be properly measured. In addition, the team was requested to have baseline data at least before going to Board. Risks in the regulatory framework as well as sustainability beyond the project period were highlighted as *high risk.* The team was requested not to have a new component for monitoring and evaluation (M & E) but to ensure that data is adequately collected to measure outputs and outcomes.

2.1.2. The ICR team's judgment on quality at entry is based on the advice provided by the QER, on a full review of project preparation and appraisal documents that provided the analytical basis for the project design, as well as on the findings from a field visit and interviews and discussions with all project stakeholders.

2.1.3. Responding to the PDO to increase banking system transactions through mobile phones, the design of the project focused on developing and implementing a **single interoperable payment system**, ensuring the participation of banks and mobile network operators, establishing agent networks, and putting in place an appropriate legal and regulatory framework. The single interoperable payment system consisted of: (i) an RTGS system; (ii) an image-enabled ACH system; (iii) an EFT/POS/ATM front-end processing system; and (iv) a MPS. The broader scope of the project components - that included establishment of a single interoperable system consisting of the RTGS, ACH, EFT/POS - does not seem to be linked to the PDO nor to the performance indicators provided in the Results Framework. Further, the ICR review does not find in the preparation and appraisal documents, adequate explanations to assess the role that the RTGS/ACH components play in fulfilling the stated PDO. In addition, there are no indicators to measure any of these components, except the MIPS component. As a result, even though the RTGS and parts of the ACH were successfully implemented, it was difficult for the ICR team to accurately assess these components' contribution to achievement of the PDO.

2.1.4. Further, it is not clear why such a complex system integrating the settlement of gross and retail value payments with an MPS was necessary to achieve the PDO. While acknowledging that, if successfully achieved, the project would have represented the first time a country managed to create a single, national interoperable payment and banking system in which mobile phones and local banking agents were the main payment instruments and devices, the Project Appraisal Document (PAD) justified this choice on the grounds that such an approach was "the best and most cost-effective way for financial services to reach all the people in Maldives, given the country's challenging geography, thin financial sector, and relatively high mobile telephone penetration."

2.1.5. Despite the assertion that the project design was the "best and most cost-effective", absent from the project preparation and appraisal documents was the type of economic and financial analysis to justify the heavy investment in the RTGS to fulfill the more limited project objective to expand financial inclusion through the use of mobile phones. Also not found was an analysis of the costs and benefits to the commercial banks to upgrade their core banking systems to be able to interoperate with the Interoperable Payment System platform being developed under the project. Further, fee structures to justify the Bank of the Maldives Ltd (the largest participating bank) sharing its ATM and branching infrastructure and card acceptance business -- if analyzed, negotiated, and agreed at an early stage -- might have provided the framework for an arrangement that ensured all parties' full participation in the project.

2.1.6. Because a simple mobile phone banking platform was all that was needed to reach population groups in the outer atolls, a more modest Mobile Network Operator (MNO)-led Mobile Financial System (MFS) model,[2] or even a commercial bank-led MFS model[3]

[2] In a Telecom-led MFS model, the telecom company is the issuer of the product and handles all activities, including responsibility for customer funds.

similar to those operating successfully in many other countries, would have been a more appropriate design for achieving the project objectives. The Bank project team provided assurances that they followed a consultative process and "conducted lengthy sessions during missions where various options; Bank-led model, MNO led model, MMA led model etc. were discussed". The Bank project team, nevertheless acknowledges that these discussions are not recorded in detail in any of the Aide Memoires. Hence the project team asserts that the design was agreed upon in a democratic manner and was not a top down approach. However, because the project did not succeed, banking and payment services are still not available—especially to people in the atolls—even after 80 percent of the project funds were utilized.

2.1.7. **Soundness of background analysis:** A Vision Document and Project Framework for "Developing a National Banking and Payment System with Mobile Phones" developed jointly by CGAP and MMA in December 2006, found that a retail payment system that relies primarily on mobile phones is feasible in Maldives, given sufficient commitment by the government, banks, and mobile operators. However, neither this study nor any other study conducted a cost-benefit analysis for the participants. In fact, both the Bank of Maldives (BML) and Dhiraagu (the largest mobile network operator) informed the ICR mission team that they had repeatedly requested such an analysis over the implementation period, but none was supplied. If such a study were carried out, the concerns of BML (such as cost and revenue-sharing arrangements) may have been addressed upfront, thereby ensuring their participation when the MPS was ready to be launched. This study also noted that "a Large Value Funds Transfer (LVFT) system" or "an appropriately scaled Real Time Gross Settlement (RTGS) system" was "somewhat outside the scope of this project," although it could be implemented by MMA to facilitate business-to-business, government-to-government, and bank-to-bank payment. This advice was not taken into account during the project's design phase, thereby resulting in a highly complex undertaking. Furthermore, no analysis was done to justify the need to implement an RTGS system as an essential part of this project in achieving the PDO. Even the outcome indicators do not reflect statistics on large-value transactions or impact.

2.1.8. **Lessons learned from previous World Bank Group-assisted projects:** During the preparation of this project, the World Bank admitted that it had not funded a branchless banking project of any kind. The World Bank also admitted that no country has yet developed a retail payment system that relies primarily on mobile phones, that is open to all mobile phone operators and financial institutions, and that delivers basic banking services to all citizens. However, the World Bank has considerable experience in implementing payments system projects, including installation of ACH and RTGS systems in many countries, which is perhaps one reason why those systems were added to

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[3] In a Commercial Bank-led MFS model, the bank is the primary driver of the product or service, typically taking the lead in marketing, branding, and managing the customer relationship. The customer has a contractual relationship with the bank, which often outsources certain activities to one or more service providers (such as a Mobile Network Operator – MNO) for the transmission of transaction details and sometimes even the maintenance of clients' sub-accounts.

the MPS in this case, albeit without a justification as to why RTGS was needed to achieve the PDO under this project. The preparation team drew more on CGAP's experience. The work CGAP's technology team had carried out on branchless banking and on mobile phone banking in particular underscored the following key success factors: (i) ease of use of the user interface; (ii) communicating clear benefits from the service to potential users, especially as regards savings products (where take-up generally has lagged behind bill payment and remittance services); (iii) ensuring security of communications and transactions, and allaying public concerns in this regard; (iv) providing clarity to agents on the economics of agent service provision and ensuring adequate returns for them, to avoid undue turnover of agents; and (v) making account opening requirements work for the poor.

2.1.9. While the preparation team carefully considered these aspects through the design stage of this project, it could have done more to communicate with the main participants—the banks and the Mobile Network Operators (MNOs)—about the costs and benefits of participation so that BML could not withdraw on the reason that it never received a concrete analysis of the benefits that would accrue to BML by participating. The implementation reports for the project indicate that the lion's share of blame falls on BMLs shoulders for putting its commercial self-interest and its dominant market position ahead of the legitimate objectives of the country to enhance financial inclusion in the atolls. While this may be true, it can also be said - as a lesson learned with hindsight - that the importance of BML's participation and the potential of these constraining issues could have been anticipated at an earlier stage and mitigation measures implemented to address those risks.

2.1.10. In response to the second lesson, which clearly pointed to the lack of required expertise to implement projects in Maldives, the proposal included a provision for technical assistance, assigning competent international experts to MMA. However, in spite of repeated requests by participating banks and MNOs, these experts failed to provide them with a cost-benefit analysis. In addition, the need to include RTGS (or the role it plays) in the planned mobile retail payment system was similarly neither justified nor explained in an appropriate manner.

2.1.11. **Risk Assessment:** The overall risk of the project was rated as *Moderate* in the Project Appraisal Document (PAD). The Implementation Completion Report (ICR) team does not agree with this rating. Lack of Government of Maldives (GOM)/MMA ownership was rated *low* and lack of ownership by key stakeholders was rated *Moderate*. Clearly, *both* should have been rated *high* so that appropriate mitigation measures could have been anticipated and applied from the very beginning, even before BML refused to participate in the project, given that BML's participation was critical to operationalizing the project as it has been designed. Even at the QER, the peer reviewers and management "wanted to be convinced that there is buy-in **not only** from the Maldives Monetary Authority (MMA) but also from other stakeholders including the Ministry of Finance and the private sector".

2.1.12. The project envisioned a single interoperable payment system that would have combined the services of all the banks and mobile network operators operating in the country. Such a total interoperable system, if fully implemented, would indeed have been "an exemplar for other South Asian and Sub-Saharan African countries with some of the same characteristics" as recorded in the PAD. However, what was overlooked was the unusual situation proper to the financial sector of Maldives, with its unique geographical dispersion of 300,000 people across 200 scattered islands in 26 atolls. Here, one locally owned commercial bank—with more than 62 percent of the market share and the only network of branches among the atolls—remains unwilling to share its core banking system and card platform with the other banks and cellular companies operating in the country. This apparent critical risk was not properly recognized at the outset, and no mitigating action was planned or taken during the entire implementation period.

2.1.13. While mobile phone banking in general is not considered high risk, the project as designed – with high levels of interdependency and interoperability between different bank and telco business interests – represented a high aspiration. Interoperability is still a subject of contentious debate today. Thus the design made the project higher risk than would normally be expected of a simple mobile banking solution. More important, because the project aimed to develop a solution that had not been possible anywhere else in the world, it was explicitly described as a pilot. In the case of pilot projects, it would have been prudent for the project team to consider putting in place, even at the design stage a Plan B – i.e. alternative plans in case critical risks triggered remedial actions. However, no Plan B was ever developed for this project.

2.1.14. **Adequacy of participatory processes:** Although the World Bank and MMA teams held several discussions with the banks, MNOs, and other stakeholders, these discussions did not succeed in building the necessary ownership and interest within the largest domestic bank and MNO. Without a clear participation signal from BML, the other banks had no incentive to participate in the project, as BML's branch network is critical for liquidity management purposes. Nor is it clear that BML's expressed concerns with respect to recovering its investment in its ATM network and ensuring a protection period for its profitable card acceptance business were addressed in the design of fee structures, revenue sharing, or in the terms and conditions of the Memorandum of Understanding (MOU). Perhaps greater background work on various issues—including a schedule of charges by which participants must abide and cost implications for customers, banks, and MNOs of the entire operation—could have led to more fruitful discussions and elicited greater enthusiasm among the critically important participants. Again as noted, the issue of adequate participatory processes was raised at the QER.

2.1.15. **Adequacy of government commitment:** Although the government initially showed keen interest in the project, the level of interest appeared to wane after changes in country leadership occurred during the presidential and parliamentary elections of 2009 which changed the leaders who had been the initial champions of the project and its objectives. Thus, when the issue of non-participation by the government-owned bank (BML) surfaced later on, it appears that the government was no longer keen to resolve matters by perhaps enforcing BML's participation for the sake of the country, and

thereby bringing the project to operation. The project documents also show that the award of the contract was delayed substantially after the change of the government and until the Bank received written confirmation of the borrowers' commitment to the project. Accordingly, on July 6, 2009 the Deputy Governor of MMA informed the World Bank that they had signed a Memorandum of Understanding with BML on July 2, 2009 and MMA's commitment to the project was reconfirmed. On the same day, the Minister of Finance and Treasury (MOFT) also confirmed to the World Bank in writing that they consider the project to be a top priority.

2.2. Implementation

(including any project changes/restructuring, mid-term review, Project-at-Risk status, and actions taken, as applicable)

2.2.1. The implementation of the project has not been easy, not least because the implementing agency—the MMA—had no prior knowledge, preparatory study exposure to, nor experience in implementing such a novel and complex project. The project itself was pioneering in the field of mobile financial services, with no instance at that time of any other country having designed or implemented such a "Regulator-led model" of mobile phone banking or mobile financial services in which all banks, as well as MNOs, would interoperate, and whose system would additionally be linked to the RTGS and the ACH. The then Governor, along with the Ministry of Finance and Treasury (MOFT), strongly supported this initiative and the leadership of implementation was given to a Policy Steering Committee (PSC) and a Project Advisory Committee (PAC), both headed by the Governor. The PAC consisted of representatives from the MMA, banks, MNOs, and a representative from the Department of National Registration. Actual implementation was carried out by a newly established Mobile Phone Banking Unit (MPBU) at MMA, headed by a Senior Executive Director and supported by a Technical Advisor recruited under the project. Although implementation could not be completed according to the original schedule, due to various delays, most of the hardware and software was ultimately procured and installed by the extended project closing date. As a result, two of the subcomponents went live and are functioning successfully. The RTGS went live in 2011, and one part of the ACH—i.e., Direct Credit payments—went live in 2012, after adequate user testing and training. However, the other two sub-systems of ACH—the Direct Debit system and the electronic presentment of checks (check imaging and truncation system)—are yet to be implemented. The Direct Debit system was delayed due to the holdup in finalizing the Operational Guidelines, while the general setbacks in operationalizing the project have meanwhile rendered obsolete the original scanners for the check imaging system that were to be procured. Moreover, the two main subcomponents, which are the MPS and the Interoperable EFT Switch, could not be operationalized when the largest bank in Maldives (BML) refused to join the interoperable system on the pretext that the system would erode its market share, allow other banks to compete for its credit and debit card acceptance business, and access its ATM and branch networks without a fee structure that it considered adequate to compensate for its significant investment. Therefore, although BML had endorsed the project concept at the consultations held in December 2007, and had further expressed its willingness to support the project by signing, with the approval of its Board, the MOU

with the MMA in November 2009 securing its participation in the interoperable system, it nevertheless reneged on the MOU when the system was on the verge of being operationalized.

2.2.2. As a result, the MPS could not be launched, and the expected outcomes of the project could not be achieved. The project rating was downgraded to *Moderately Unsatisfactory* in June 2009, for a brief period of five months, and then upgraded to *Satisfactory* again in November 2009 after BML signed the MOU. Subsequently, the project was again downgraded to *Moderately Unsatisfactory* in December 2010, and eventually further downgraded to *Unsatisfactory* in April 2013. This rating held until the closing date.

2.3. Monitoring and Evaluation (M&E) Design, Implementation, and Utilization

2.3.1. The design of the project included a transaction reporting capability, so that the nature, volume, and purpose of electronic m-banking transactions could be recorded automatically and reported regularly. This system would produce most of the required monitoring data. However, the system could not be put to use, as there have been no electronic m-banking transactions to date in the absence of an operational MPS. Although MMA planned to collect information from banks on savings and credit balances by atoll and by island size, as well as by type of account holder and by sector of economic activity, the data collection process appears to be at a standstill, which has made it difficult to ascertain the validity of such data produced by BML.

2.4. Safeguard and Fiduciary Compliance

2.4.1. No social safeguard policies were triggered by the project. However, the project did consider the need to ensure customer protection through a proper legal and regulatory framework. Awareness campaigns to help users understand and value the proposed system were planned and executed during the implementation period. The Safeguard Compliance is rated as ***Satisfactory.***

2.4.2. The project complied with most of the fiduciary covenants during implementation. The MPBU maintained adequate records and accounts and furnished the interim unaudited financial reports for the project within 45 days of each quarter and the audited accounts within six months of the end of each year. However, the government failed to call regular meetings of the PSC and the PAC, especially towards the end of the project. Fiduciary Compliance is rated as ***Moderately Satisfactory.***

2.5. Post-Completion Operation/Next Phase

(including transition arrangement to post-completion operation of investments financed by present operation, Operation & Maintenance (O&M) arrangements, sustaining reforms and institutional capacity, and next phase/follow-up operation, if applicable)

2.5.1. An MPBU was set up in MMA in January 2008 to implement the project. This unit was set up as a separate cost center to ensure that it functioned independently of the

mainstream MMA. It was assumed that, as transaction volumes began to increase, this unit would have generated more than enough revenues to meet its operating costs, thus making it a sustainable business unit. At that time, a transition was planned from the MPBU structure to a MIPS Business Unit structure. However, since the MIPS—including the MPS and the EFT Switch—could not be operationalized due to the non-participation by the largest bank in Maldives, the planned transition became redundant.

2.5.2. However, when the MPS could not be operationalized due to non-participation of BML, MMA obtained its Board's approval to sell the tested and ready MPS, called *Keesa*, to an interested eligible party through a public bidding process. Although the largest MNO, called *Dhiraagu*, initially showed interest in buying the MPS, the company later informed MMA that it would not bid on the system, as it did not see a viable business case for the MPS. As such, when bidding was opened, not a single bid was received. One reason for this lack of interest is the absence of a regulatory framework within which an MNO could operate the system as a non-bank institution.

2.5.3. The MPS platform called Keesa is technologically outdated[4] and obsolete. Given the major market innovations over the past seven years, there are low-cost, nearly standardized, off-the-shelf platforms that are now available. The vendor's opinion is that the country should choose a less costly and more sophisticated, user-friendly, newer solution rather than try to upgrade the older software.

2.5.4. MMA can consider opting for an MNO-led model and, specifically, an "MNO-led custodial bank-based model," as successfully launched in some countries provided that:

- Interoperability with banks is not made a precondition;
- The MNO platform is not linked to MMA's RTGS or ACH switches in real time;
- A Tier-II banking license for either the MNO or for its agents is not made mandatory and MMA enables an MNO to operate the MFS system as a non-bank model; and
- A custodial bank arrangement is put in place to provide for the necessary supervisory, risk management, and consumer protections.

2.5.5. The MNO would have various options with respect to the technology platform.

(i) One option would be to use Keesa, invest in the necessary upgrades, and transform the codes to operate it as an MNO-led model. As described earlier, this option raises issues of cost and technological efficiency. Since the operating license would need to be transferred from MMA to an MNO, the pricing of the transfer would have to be negotiated, taking into account that the platform is now obsolete. Moreover, in order to operate this model, the MNO will have to obtain a banking license, a prospect that is not attractive to an MNO.

(ii) Another possible avenue would be to allow the MNO to develop its own platform.

[4] Keesa runs on the Enterprise Application platform version 5.6 and needs to be upgraded to at least the 5.12 version, with each version requiring over 30 patches for the upgrade.

(iii) Finally, a third option would be to obtain a multi-operator platform from a tried and tested solution provider.

2.5.6. In order to enable an MNO-led MFS model, MMA would need to create an appropriate enabling regulatory environment, including the immediate enactment of the Payment Systems Law. If an MNO-led MFS model is to be examined as a viable option, MMA will have to issue regulations enabling non-bank providers to own and operate MFS. The prudential regulations to govern non-bank mobile money providers would give MMA the authority to issue guidelines and to effectively mitigate the risk of mobile money customers losing the money they have stored in the system.

2.5.7. With regard to ACH operations, it is prudent to issue the finalized regulations and start Direct Debit operations. With regard to check imaging, MMA should go ahead with procuring new scanners, as planned.

2.5.8. With regard to the EFT Switch, MMA has not incurred any additional expenses for the national switch. It may be prudent at this stage to evaluate this separately as a longer-term payment reform option.

3. Assessment of Outcomes

3.1. Relevance of Objectives, Design, and Implementation

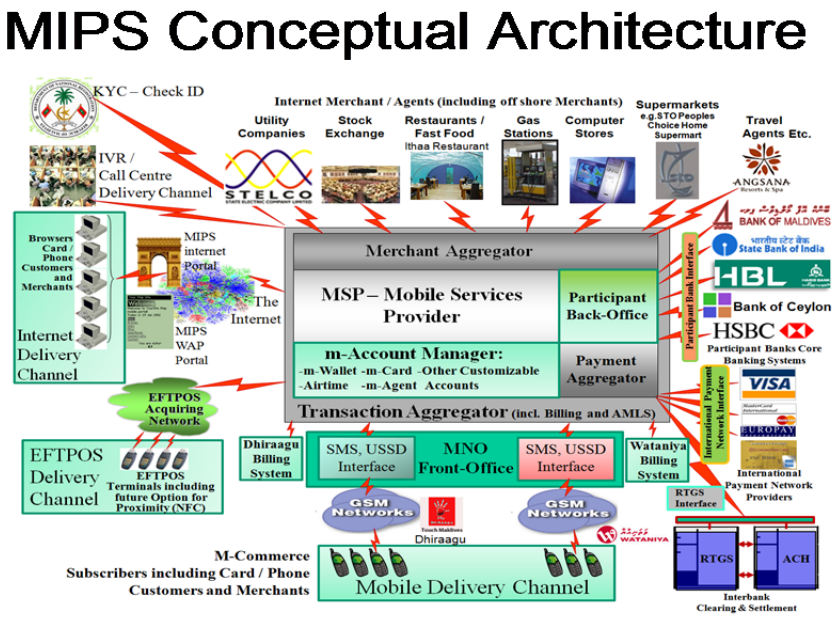
(to current country and global priorities, and Bank assistance strategy)

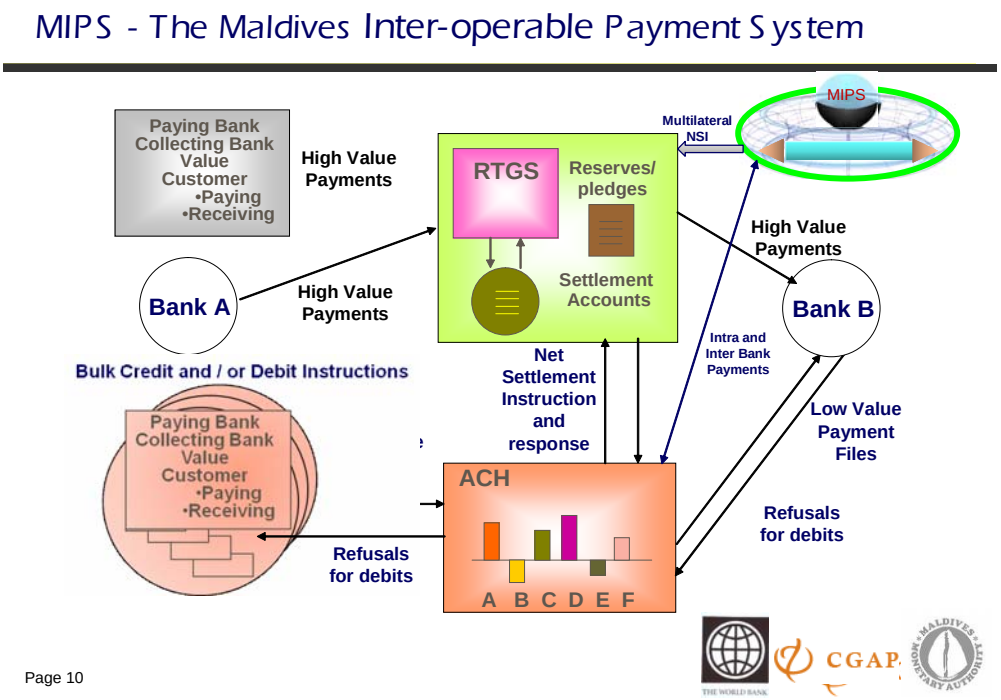
3.1.1. The project's objective clearly remains highly relevant to the development of the Maldivian economy. It also remains relevant to the World Bank's sector assistance strategy of improving access to finance as part of an effort to enhance private-sector development. Therefore, both Bank Management and MMA/MOFT are eager to find a way to achieve the goal of reaching the unbanked by using mobile phones to carry out banking and other financial transactions. It is, therefore, critical to find a way out of this stalemate. The ICR team had provided some options for MMA and MOFT to consider in this respect, along the lines suggested in the Next Phase section presented above (Section 2.5).

3.1.2. **Design and Scope:** Both the design and scope of this project may no longer be relevant and must be changed along the lines discussed in the Next Phase section presented above.

3.1.3. **Implementation:** The PDO and contribution to the CAS clearly focused on the goal of reaching the unbanked and improving access to finance using mobile phone banking as a retail payment platform and a lower-cost access channel to outlying atolls than is normally provided by traditional banks. However, the rationale is not clearly articulated in the PAD for complicating the project design to include implementation of an RTGS and an ACH—major technical and implementation challenges by themselves—that might have justified a free-standing technical assistance grant. An added layer of complexity was inherent in the design requirement that the MIPS be managed by MMA to interoperate with all banks and all MNOs, with their respective agents, as well as with

the gross settlement and ACH systems. The two diagrams below display the complex management process that MMA faced, having no precedent in the world from which to borrow, replicate, or even mimic.





3.1.4. Indeed, at the time of appraisal through the first stages of project implementation, detailed operating guidelines and procedures for MIPS, associated staff training plans, and an assessment of staff capacity within MMA to manage and operate such a

complicated back office were not provided to guide implementation of the centrally important project element, without which the PDO could not be achieved.

3.1.5. In effect, MMA lacked the skills and expertise to implement a complex payment system, which was further exacerbated by the changes in the leadership of MMA during the implementation period. Although this risk was recognized in the Critical Risks section, it was nonetheless rated as Moderate and mitigation measures consisted of recruiting experienced consultants, building the cadre of staff for the MIPS, insisting on close supervision by a technical working group, and training by international experts of local staff in MMA. However, not even a study tour was planned to expose the inexperienced MMA management and staff to a country that was successfully managing non-interoperable systems at that time, such as Kenya and the Philippines.

3.1.6. If a future opportunity arises to support implementation of an MNO-led model, MMA's involvement as the regulator would be necessary with the authorities to issue e-Money and mobile money regulatory guidelines under a Payment Systems Law. Hence, capacity building within MMA would continue to be a crucial element for successful implementation.

3.1.7. As the country's monetary authority, MMA is de facto responsible for anything having to do with the payment system, whether it be retail or large value, as it has a direct impact on the money supply and monetary policy.

3.2. Achievement of Project Development Objectives (PDOs)

(including brief discussion of causal linkages between outputs and outcomes, with details on outputs in Annex 2)

3.2.1. *Unsatisfactory***.** The project was unsuccessful in achieving the PDOs. Almost none of the Outcome and Output Indicators could be achieved as the MPS could not be operationalized, even after the planned hardware and software systems were procured and installed.[5] Thus, 80 percent of the project funds amounting to US$6 million were utilized to install and commission the three systems: the RTGS, the ACH, and the MIPS. However, only the RTGS and the Direct Credit function of the ACH are in operation now. Although these two systems are generating some benefits, they are unable to contribute to increasing the use of banking system transactions via any mobile phone operator and cashing out through any banking agent. Therefore, the population residing in remote atolls is still forced to carry, hold, and exchange significant amounts of cash and have to travel to Male to withdraw cash, collect payments, pay bills, or transfer payments. The goal of expanding access to financial services through mobile telephones remains unfulfilled as the MPS could not be operationalized.

[5] Already noted is the fact that output and outcome indicators relating directly to the RTGS and ACH were never developed for the project. Given that expenditures on these two major software and hardware systems represented the major portion of actual project expenditure, this can be considered a flaw in the project results monitoring framework.

3.3. Efficiency

(Net Present Value/Economic Rate of Return, cost effectiveness, e.g., unit rate norms, least cost, and comparisons; and Financial Rate of Return)

3.3.1. Since the main subcomponent, the MIPS, could not be operationalized, the principal benefits envisaged during project design, and planned to be assessed through the listed project outcome and output indicators, have not been achieved. Although most of the systems were procured and installed and 80 percent of the funds (US$6 million) were utilized for this purpose, the project has yet to achieve any of the benefits that could be measured through the listed indicators. However, the fact that the benefits listed under the indicators have not been achieved should not be construed to mean that no benefits have accrued under the project. The benefits that have accrued so far include: (i) a fully functioning RTGS system that is processing 100 transactions on an average per business day. In 2013, a total of 22,059 transactions in Rf and 13,118 transactions in U.S. dollars have been processed. The value of transactions processed are Rf 351.43 billion and US$2.18 billion, respectively.

3.3.2. While it is tempting to calculate the per transaction or per unit of currency value to determine the efficiency of the system, the current basis for determining the viability of RTGS has shifted from such estimates to assessing the benefits of mitigating settlement and systemic risk of interbank settlement process, and thereby avoiding stresses to the system arising from a default of a large-value payment. Since such a default could potentially trigger a financial crisis affecting the growth of the economy, RTGS plays a major role in preventing such defaults, with substantial benefits; (ii) a fully functioning Direct Credit service under the ACH that is processing 225 transactions on an average business day. A total of 75,533 Maldivian rufiyaa transactions and 34,974 U.S. dollar transactions have been processed since the system went "live" on February 2, 2012. Moreover, the Cheque Truncation and Imaging system is expected to go "live" by June 30, 2014 and the Direct Debit service under the ACH is also expected to go "live" by December 31, 2014, thereby adding further to the existing benefits. An additional benefit is accruing by way of electronic transfer of pension payments of all retired government officials directly to their bank accounts. These pensioners appreciate this benefit, which spares them the trouble of traveling to Male from their resident islands to collect their pensions.

3.4. Justification of Overall Outcome Rating

(combining relevance, achievement of PDOs, and efficiency)

Rating: *Unsatisfactory*

3.4.1. *Relevance*: As explained above, while the project objectives remain highly relevant to Maldives, the design, scope, and implementation framework would need to be changed going forward. Therefore, this is rated as *Low.*

3.4.2. Achievement of PDOs: As explained above, the PDOs were not achieved, as the MIPS—including the MPS—could not be operationalized. The achievement of PDOs is rated as *Unsatisfactory.*

3.4.3. *Efficiency*: While some benefits have accrued from the project so far, the main goal of expanding access to financial services through mobile phones has not been achieved. Efficiency is rated as *Minimal.*

3.4.4. Based on the above factors and the discussion in Section 3 above, the overall outcome is rated **Unsatisfactory.**

3.5. Overarching Themes, Other Outcomes and Impacts

(if any, where not previously covered or to amplify discussion above)

(a) Poverty Impacts, Gender Aspects, and Social Development

3.5.1. *Poverty Impact:* The project's aim was to improve efficiency in the banking and payment system and to make the financial services more cost-effective, thereby increasing access to financial services by the unbanked and the poor. Therefore, the project was intended to contribute to poverty reduction through: reduction in the cost of banking transactions, especially for the poor and unbanked; reduction in the need to hold cash, thereby increasing investable funds for industries as well as individuals; reduction in cost and travel time to access banking services; and reduction in regional disparities that affect the poor adversely. None of these benefits could be achieved, as the MPS could not be operationalized. Nonetheless, the project has had some positive impact on poverty reduction by operationalizing the payment of pensions and social transfers electronically. Pensioners now have more time to engage in other productive pursuits, rather than spending time pursuing and collecting pension payments. In addition, the RTGS ensures real-time, large-value transfers that improve liquidity management for businesses and industries. In addition, the RTGS system offers a powerful mechanism for limiting settlement and systemic risks in the interbank settlement process.

3.5.2. *Gender Aspects:* While the project did not have a specific focus on gender, the benefits accruing under the project would have been proportionately higher for women than men, simply because it would have brought greater convenience to them. It is, therefore, still very important to strive to achieve this project's development objectives.

3.5.3. *Social Development*: The project did not have any social development objectives. However, it could be surmised that increased financial access would have a development impact, especially for the poor.

(b) Institutional Change/Strengthening
(particularly with reference to impacts on longer-term capacity and institutional development)

3.5.4. The project resulted in substantial development and strengthening of MMA's capacity and skills through technological process-related interventions. By implementing the RTGS, MMA has been able to limit settlement and systemic risk in the interbank settlement process. It has also enhanced efficiency of the settlement process through the installation of the ACH. MMA is planning to install the EFT Switch, which will increase the efficiency of card payments in Maldives. Moreover, the project implementation experience has been a huge learning-by-doing for MMA staff. They are now concentrating on further increasing the availability and efficiency of banking transactions in Maldives and focusing on expanding access to the poor and unbanked.

(c) Other Unintended Outcomes and Impacts (positive or negative)
None.

3.6. Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops
(optional for Core ICR, required for ILI, details in annexes)
N/A

4. Assessment of Risk-to-Development Outcome
Rating: *High*

4.1. The ICR team considers that the risk-to-development outcome is high, as long as the design, scope, and implementation arrangements are not changed to suit the current circumstances.

5. Assessment of Bank and Borrower Performance
(relating to design, implementation and outcome issues)

5.1. Bank Performance

(a) Bank Performance in Ensuring Quality at Entry
Rating: *Unsatisfactory*

5.1.1. The World Bank's performance in the identification, preparation, and appraisal of the project was Unsatisfactory. The World Bank responded to a request by the MMA/government after they were encouraged to try mobile phone banking, having heard about it at the regional microfinance workshop in December 2005. With no knowledge of or experience in mobile phone banking, the government relied completely on the World Bank Group to provide the best advice to successfully design and implement such system. MMA invited CGAP to explore the viability of the project, undertake a situational analysis, and compile a plan to drive the project forward to completion. CGAP responded

enthusiastically and completed the study in December 2006[6] in conjunction with the MMA, which found that a retail payment system that relies primarily on mobile phones is feasible in Maldives, given sufficient commitment by the government, banks, and mobile operators. During preparation and appraisal, the World Bank along with CGAP appeared to be more focused on designing a project that would be the first of its kind in the world, and hence an "exemplar for other South Asian countries with some of the same characteristics, as well as countries in Sub-Saharan Africa and other parts of the world," rather than assessing the applicability and acceptance of such a project in Maldives, which is characterized by a single domestic bank that controls more than 62 percent of the market share. A deeper discussion with BML management and customers would have revealed that this bank had its own grand designs and targets that did not align with the interoperable MPS offered under the project. For example, while the project was being implemented, BML was, in parallel, investing heavily in its own brand of credit and debit card systems and in the 26 ATMs outside Male, in addition to the 21 ATMs in Male itself, which they did not plan to share with any of the competing banks operating in Maldives. BML's commitment to participating in an interoperable payment system was clearly lukewarm from the very beginning. Moreover, a review of the MMA Act and the Banking Act would have indicated that the MMA did not have the legal jurisdiction to mandate that BMA join the interoperable system for the overall growth and development of the country.[7] Moreover, MMA did not have a Payments Systems law that would have given them explicit and enhanced legal and regulatory powers to effect such action.

5.1.2. The two alternatives that were considered were both narrowly focused on other sources of funds, such as trust funds, institutional development funds, a Learning and Innovation Loan (LIL), or an Adaptable Program Loan (APL). Alternative designs—such as a simple MNO-led MFS model or a commercial bank-led MFS model that would have been more suitable for a small economy such as that of Maldives and which were gaining popularity in Kenya and the Philippines—were not considered, and no reasons were offered for this oversight.

5.1.3. In addition, the broader scope of the project's components—to establish a single interoperable system consisting of RTGS, ACH, EFT/POS was not adequately linked to the PDO or the performance indicators. The rationale for including an RTGS system and interlinking it to such a highly complex, ambitious, and interoperable MPS is similarly not discussed; and none of the project outcome and output indicators even reflect the contributions of the large-value payment system or the ACH components. As a result, it was difficult to accurately assess project achievements and ratings (even though the RTGS and parts of the ACH were successfully implemented).

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[6] "Developing a National Banking and Payment System with Mobile Phones – Vision Document and Project Framework," CGAP and MMA, Maldives, December 2006. Authored by Gautam Ivatury (CGAP technology specialist), Bill Donges (Payment Systems and Banking Technology- CGAP consultant), Peter Goldfinch (Mobile Phone Payment Systems - CGAP consultant), Keith Smith (Banking and Payment Systems Regulations - CGAP consultant), and Jenny Hoffman (Mobile Phone Banking - CGAP consultant). Ibraheem Naeem (MMA) made important contributions

[7] Under the Banking Act, Section 37, MMA could ask the banks to participate in such schemes however, enforcement is questionable.

(b) Quality of Supervision
(including of fiduciary and safeguards policies)
Rating: *Moderately Unsatisfactory*

5.1.4. The World Bank team included experienced staff with expertise in relevant areas, including payments systems, legal and Anti-Money Laundering (AML)/Combating the Financing of Terrorism (CFT), environment, procurement, and financial management. There was considerable continuity in the project team; particularly the Task Team Leader (TTL) and the Lead Counsel remained involved from the beginning to the end of the protracted implementation period. Moreover, CGAP technical specialists (consultants) were on board for the entirety of the project; they designed and wrote the technical documents, as well as handled the regulatory and operational aspects of banking and mobile payments. The strong legal expertise in the team spotted the need for MMA's legal mandate and suggested amendments to the MMA Act to mandate that all banks participate in nationally important projects. Furthermore, the legal team drafted the payment systems law that would have given MMA broad explicit powers in all matters pertaining to payment systems. However, this was stuck in the political turmoil even to date. Moreover, even the draft payments regulations were drastically revised by the International Monetary Fund (IMF), and recommendations that would have transformed MMA into a central bank were watered down by IMF amendments.

5.1.5. Also, notably, the legal team achieved under the project rubric several noteworthy improvements to Maldives' legal and regulatory framework with respect to the country's financial system. When the project commenced in 2008, the legal framework for the financial system was at a rudimentary stage. Apart from the MMA law, no major law existed other than the financial institutions' regulations. The team worked with MMA to develop the anti-money laundering regulations, the payment system regulations, the consumer protection regulations, and the agency regulations for MPS. Legal technical assistance was provided through continuous interaction and collaboration with not only the legal officers but officers from various departments of the MMA. Consultancy support was also provided for the system rules relating to RTGS and the ACH. The project was a catalyst for the drafting of the AML Law and the Payments Law.

5.1.6. Further, the World Bank team conducted regular half-yearly implementation support missions from 2008 until 2013. In 2009, three missions were conducted. The March 2009 mission first flagged the possibility that BML may not participate in the project, as it was delaying the signing of the MOU with MMA concerning participation. The June 2009 mission then downgraded both the DO and IP to Moderately Unsatisfactory for the first time when MMA was still unable to get BML to sign the MOU. The World Bank also held up the clearance of the contract for implementation of the MIPS. The November 2009 mission then upgraded the project to Satisfactory once again after BML signed a conditional MOU. The World Bank cleared the contract for implementation of the MIPS and implementation proceeded as usual. This corresponds to a period during which there were leadership changes in government, in MMA, and in BML; the task team noted that the strong commitment and ownership of the government

and MMA was now less certain. The leadership changes tilted the balance of power in favor of BML, and since then, MMA has been unable to convince BML to participate in the project.

5.1.7. At this time, constraints to further project implementation occurred within a changed political landscape. Given BML's legitimate commercial interests and MMA's relative powerlessness to mandate this major bank's participation in the project for the overall benefit of the economy and the country, it is unclear what, if any, leverage the task team or bank management in fact held to resolve the impasse.

5.1.8. At this critical juncture, the task team urged the sale of the MIPS platform to BML or to either MNO. However, BML had already concluded investment initiatives in its own card platform, which it considered to be more advanced than Keesa. Without BML's participation, the MNOs could not identify a business case that made the approximately US$700,000 investment in Keesa worthwhile,[8] especially since the highly customized platform was now considered technologically obsolete and would require an additional upgrade investment of more than US$200,000.

5.1.9. Once these efforts failed, neither the MMA nor the MOFT could do anything more to bring the project back on track.

5.1.10. Although the World Bank and CGAP provided high quality and continuous technical inputs throughout the lifetime of the project, additional due diligence during supervision would have allowed the project task team to early identify triggers for critical events, to stop those events from happening, to change course, or, indeed, to undertake restructuring actions, including consideration of cancellation when project development objectives seemed unlikely to be realized. However, despite clear signals that BML's collaboration was hesitant and that neither the Government nor MMA were willing or able to persuade BML to participate, no proactive action was taken during the entire 6 year supervision period. The borrower's and World Bank management's decision to undertake a Level I restructuring would have allowed a recalibration of the project in order to achieve some degree of development effectiveness.

5.1.11. As a result of the inadequate focus on achieving results with respect to the Project Development Objective, the quality of supervision is rated as **Moderately Unsatisfactory.**

(c) Justification of Rating for Overall World Bank Performance
Rating*: Moderately Unsatisfactory*

5.1.12. Based on the Unsatisfactory rating for quality at entry and the Moderately Unsatisfactory rating for project supervision, overall World Bank Performance is rated as **Moderately Unsatisfactory** in accordance with the Independent Evaluation Group's (IEG) harmonized rating criteria.

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[8] See Borrower's Implementation Completion Report for the value of investment in the Keesa platform.

5.2. Borrower Performance

(a) Government Performance
Rating: *Unsatisfactory*

5.2.1. During the appraisal and effectiveness of the project, the government's commitment to it was strong. However, with the changes in the government that occurred in 2009, that commitment appeared to wane. Therefore, when BML dragged its feet in signing the MOU with MMA to secure its participation in the project, the government did nothing to change the bank's decision, despite the fact that two government Directors sat on BML's Board and the government owned 51 percent of BML's shares. The Minister of Finance had reiterated its inability to advise the BML to join the MPS, as it would be construed as an intervention in bank operations. In the interest of benefits that would accrue to the general population, the government should have directed BML to go along with the project, since MMA had offered certain incentives. Overall, one notes a lack of commitment from both the MOFT and MMA senior management. This may have baffled the World Bank team, which was relying on the government's commitment and majority ownership of BML to ensure that the largest bank participated fully in the project. The government's performance during the project is, therefore, rated as **Unsatisfactory.**

5.2.2. Nevertheless, on a very positive note, the Government deserves strong credit for showing commitment to the overall objective of providing financial access to the people of Maldives through the use of mobile phone banking. This commitment is demonstrated by the fact that the government, even after the project has closed, is actively exploring with the World Bank Country Director advice for how to pursue a simple, straightforward and low cost mobile money solution that would allow for greater financial access while ensuring consumer protection.

(b) Implementing Agency or Agencies Performance
Rating: *Unsatisfactory*

5.2.3. The implementing agency, MMA, worked closely with the World Bank Group staff from the design of this project until its closing. MMA appointed highly motivated and committed counterparts to work with the international advisors financed under the project. The Authority also deserves very positive recognition for its successful implementation of the RTGS and part of the ACH system, and its efforts to strengthen the legal and regulatory framework for the financial sector.

5.2.4. However, with hindsight, it appears that MMA's inexperience was a big hindrance in its ability to steer the project successfully towards its stated objective to extend financial access through mobile phone banking. The Authority was overly dependent on CGAP and the World Bank for the scope and design of the project and on the international experts that were hired by CGAP and the World Bank to assist in the implementation of this overly complex project. Moreover, the leadership changes in the MMA also appeared to diminish their commitment and ownership. As the regulator of all banks in the country, it was expected that MMA could have exercised moral suasion to

secure BML's participation in this project. However, as discussed above, as a monetary authority MMA lacked legal authority over the financial and payment system; the Ministry of Finance, as the 51 percent owner of BML, chose not to mandate BML's participation in the project by negotiating terms that might have been more attractive to its commercial interests.

(c) Justification of Rating for Overall Borrower Performance
Rating: *Unsatisfactory*

5.2.5. Considering that both the government Performance and the Implementing Agency Performance are Unsatisfactory, the Overall Borrower Performance is rated as **Unsatisfactory.**

6. Lessons Learned
(both project-specific and of wide general application)

6.1.1. The first lesson to be learned from this experience is the critical importance of having a committed and reform-minded leadership and senior management, as well as a capable project team for implementing and sustaining complex technology-related projects. Payment systems are considered to be even more complex than IT projects. Payment systems implementation is composed not only of ICT, but also includes the application of payment rules, central banking and settlement, and risk management aspects. Hence, for the World Bank, it is important to ensure that the organization's management is fully committed to reform, that it has the support of senior policymakers, and that there is likely to be policy continuity over the project's lifecycle. The project design team should always keep in mind that government's commitment is likely to change over the implementation period as it proved to be in this case and, therefore, plan mitigating actions to be invoked if and when this commitment should waver. While at project inception there appeared to be a strong commitment among the parties involved in the MPBP, several changes in leadership occurred. The political instability that prevailed in the country from 2009 until recent times impacted the decision making process as well as the MMA's and MOFT's commitment. That softened commitment clearly impacted the implementation of the project.

6.1.2. Another lesson relates to the need to recognize early (at the planning and design stage) the technical complexity, substantial risks, and required mitigation measures associated with implementing large-scale technical programs, especially in an institution that has limited in-house technical knowledge and capacity. Furthermore, BML's participation was critical to operationalizing the project as it had been designed; hence, BML's role and participation in the project should have been addressed and managed as a critical event. The World Bank did not properly identify these substantial risks.

6.1.3. When undertaking a complex design that has not been previously tested, especially, when the project is recognized as a "pilot", it is essential for alternative plans

to be included in the project design as a Plan B that can be put in place in case critical risks trigger the need for remedial actions.

6.1.4. This project has once again validated the "Keep it Simple" (KIS) principle for designing World Bank projects. While it is often tempting to opt for a complex model that could represent a "first" in the world, practicality and pragmatism dictate that such attempts should be avoided, especially in developing countries with limited capacity and a shortage of skills. The unique Regulator-led MFS model with total inter-operability, was clearly an overly ambitious effort that over engineered the goal to introduce simple mobile phone-enabled banking services in a country with high mobile phone penetration.

6.1.5. Another key lesson is the importance of defining the Project Development Objective and to link it closely with a Results Framework (outcome and output indicators) that allows accurate measurement of progress towards achieving the project goal. Some project components were not adequately linked to the PDO or the performance indicators. As a result, it was difficult for the project team to accurately assess project achievements and ratings (even though these components were successfully implemented).

6.1.6. During project implementation and supervision, ongoing due diligence by the project team, combined with careful monitoring of achievement of project development objectives are keys to recognizing (a) when achievement of the PDO is off-track, (b) the appearance of "show stopper" risks and events; and (b) the need to change course by proactive restructuring. In the case of this project, it seems that the focus on implementing the RTGS and ACH systems drew attention and resources away from the main project objective and the main project component which was to develop the interoperable mobile phone solution that would enable the population to access their accounts using ~~their~~ mobile phones. As a result, it seems that due diligence and focus on PDO achievement was diluted and opportunities to change course were missed.

6.1.7. Shifting course during project implementation, when a critical event that significantly impacts project completion is triggered, is an essential element of good project management. In this project it seems that the project team never attempted to change course during the six years of the project period. Often there are different paths that can be taken to achieve the same goal and this project might have had a more successful end if the project had been restructured when it was facing challenges.

6.1.8. This project has also demonstrated the need for meaningful consultations with all stakeholders at all times. Simply *relying* on the power and influence of the government to force the participation of an unwilling participant did not work in this case. On the other hand, continuous and regular consultations at every step of the project, and listening carefully to the needs of the participants, could have been more effective in ensuring greater commitment and ownership from the stakeholders.

6.1.9. Another important lesson from this project is that technology-ingrained projects should be implemented quickly, before the selected technology becomes obsolete. This

also reinforces the need to keep the design and scope of such projects extremely simple so that they can be implemented quickly.

6.1.10. This project also reinforces the fact that changing the legal framework is time-consuming and fraught with risks. Although the World Bank team incorporated a legal expert in the design and implementation of this project and drafted important regulations, even today (post project closing) the crucial Payment Systems Law that would give authority to MMA to manage electronic and mobile phone-enabled banking has not been passed by Parliament.

6.1.11. Government's role in mobile banking operations should be re-examined, and a better delineation of government and private sector roles should be developed. Mobile banking or innovations in financial services, more broadly, is cross-sectoral. Innovations span the financial sector (including payments, commerce, retail, and in some cases, microfinance) and the ICT sector (including, telecom services and in some cases postal). Today, the limited growth of mobile banking globally is due, in part, to a silo-led approach pursued by stakeholders, including by operators and donors. There is something to be learned from countries that have cross-sectoral strategies and approaches as they enable the development of widely used mobile banking and other electronic payment services to expand financial access by their populations.

6.1.12. Finally, a successful system for mobile money or mobile financial services should pass the 3Cs test for effective implementation: *Control, Coverage, and Cost.* Control refers to the regulator's ability and jurisdiction to inspect, supervise, and mandate all the participants of the systems. It also includes the regulator's powers and effectiveness to effect compliance with all regulations and guidelines. This can be done either through an adequate legal framework or through power and influence originating from an authority. Coverage involves inclusivity and the technical capacity to include the targeted beneficiaries at a reasonable price. Cost refers to the need to make the services affordable and demanded by the target beneficiaries. It can be ensured through competition, efficiency, and proper regulations.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies
N/A

(b) Cofinanciers
N/A

(c) Other partners and stakeholders
(e.g. NGOs/private sector/civil society)
N/A

Annex 1. Project Costs and Financing

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

Components	Appraisal Estimate (US$ million)	Actual/Latest Estimate (US$ million)	Percentage of Appraisal
1. Establishment of Maldives Interoperable Payment System (MIPS)	6.85	5.71	83
2. Build an enabling environment and capacity – legal and regulatory, public awareness and project implementation.	1.50	1.50	100
3. Technical expertise and support	1.25	1.25	100
4. Market Survey and impact measurement	0.25	0.25	100
Total Baseline Cost	9.85	8.71	88.4
Physical Contingencies	0.00	0.00	0.00
Price Contingencies	0.70	0.00	0.00
Total Project Costs	10.55	8.71	82.6
Front-end fee PPF	0.00	0.00	0.00
Front-end fee IBRD	0.00	0.00	0.00
Total Financing Required	9.20	8.71	94.7

(b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (US$ million)	Actual/Latest Estimate (US$ million)	Percentage of Appraisal
Borrower		1.35	1.35	100
Consultative Group to Assist the Poorest (CGAP)		1.50	1.50	100
International Development Association (IDA)		7.70	5.86	76

Annex 2. Outputs by Component

The project had two main components:

Component 1 - Create, establish, and operationalize the Maldives Interoperable Payments System (MIPS): *(US$6.00 million).* The payment system was designed as a single-currency system operating in Maldivian Rufiyaas (Rf) that would be capable of interoperating with all local mobile network operators (MNOs) and integrating all the banks. The main elements of the MIPS would be the Mobile Payment System (MPS), a Real Time Gross Settlement (RTGS) system, an image-enabled Automated Clearing House (ACH) system, and an Electronic Funds Transfer (EFT)/Point of Sale (POS)/Automated Teller Machine (ATM) front-end processing system. These elements would be integrated into a single system, backed up by a disaster recovery system.

The intermediate outputs of this Component were:

- 75 percent of the adult population will have a mobile phone account.
- 100 percent of the populated islands by the end of the project will have at least one local agent at which mobile phone accounts can be opened.
- 70 percent of the adult population will have a regular bank account.
- 70 percent of salaries paid by resort owners will be deposited electronically and directly into employees' bank accounts, which in turn can be accessed through mobile phone accounts.
- 60 percent of the fishing boat load purchases by processing plants and official trading companies will be paid electronically.
- Amount of cash in circulation will decrease.

Component 2 - Building an enabling environment and the capacity to support successful mobile phone banking systems – (*US$1.00 million)* It would be necessary to develop and implement regulations to cover all aspects of the system, as well as build the capacity of regulators to supervise it. To help ensure that people and businesses understood the benefits of the system and adopted and trusted it, a promotion/public education campaign was to be conducted. Finally, a mobile phone banking unit was established under the MMA with the capability to implement MIPS.

The intermediate outputs of this Component were:

- An appropriate legal and regulatory framework covering all necessary topics for mobile phone banking and a national payments system will be designed and adopted by the end of 2008.
- Detailed implementing regulations for mobile phone banking and payment system are completed.
- 100 percent of the populated islands will have a local agent with cash-in and cash-out facilities.
- The number of customers who report that they often cannot deposit or withdraw the amounts they need when they are at their local agent's store will be less than 100 per month.
- A promotion and public education campaign is designed and implemented.

Annex 3. Economic and Financial Analysis

(including assumptions in the analysis)

The Real Time Gross Settlement (RTGS) and the Direct Credit system under the Automated Clearing House (ACH) have been launched and are operating successfully. The benefits that have accrued so far include:

(i) A fully functioning RTGS system that is processing 100 transactions on average per business day. During the busiest months of 2013, which are April and July, the RTGS processed 2,873 and 2,959 transactions respectively. In 2013, a total of 22,059 transactions in Maldivian rufiyaa and 13,118 transactions in U.S. dollars were processed. The values of transactions processed are Rf 351.43 billion and US$2.18 billion, respectively.[9] Currently, a majority of the government payments above Rf 10,000.00 and US$5,000.00 are channeled through the RTGS. While it is tempting to calculate the per transaction or per unit of currency value to determine the efficiency of the system, the current basis for determining the viability of RTGS has shifted from such estimates to assessing the benefits of mitigating settlement and systemic risk of interbank settlement process, and thereby avoiding stresses to the system arising from a default of a large-value payment. Since such a default could potentially trigger a financial crisis affecting the growth of the economy, RTGS plays a major role in preventing such defaults, the benefits of which are substantial. If large-value payments for all banks are left to be settled at the end of the day, the interbank exposures will build up, thereby increasing the risks from any bank's inability to meet its obligations. If such a risk were to materialize and a bank was unable to meet its total obligation at the end of the day, its default would cause a ripple effect in the banking sector as the liquidity position of all banks would be affected by the default and many banks would be unable to meet the cash withdrawal requests of their customers. Thus, the RTGS reduces that risk by effecting actual settlement of funds between the banks in the MMA's books in real time before the interbank exposures get too high, and also helps banks to manage their liquidity effectively.

(ii) A fully functioning Direct Credit service under the ACH that is processing 225 transactions on average per business day since the system went "live" on February 2, 2012. During the year 2013, ACH has processed a total of 81,947 transactions, which includes 51,895 Maldivian rufiyaa transactions and 30,052 U.S. dollar transactions. Moreover, the Cheque Truncation and Imaging system is expected to go "live" by June 30, 2014 and the Direct Debit service under the ACH is also expected to go "live" by December 31, 2014, thereby adding further to the existing benefits. An additional benefit is accruing by way of electronic transfer of pension payments of all retired government officials directly to their bank accounts. These pensioners appreciate this

[9] *Source*: Payment Systems Department, MMA, obtained during the ICR mission.

benefit, which spares them the trouble of having to travel to Male from their resident islands to collect their pensions.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Nagavalli Annamalai	Lead Counsel	LEGPS	
Sriyani M. Hulugalle	Senior Economist	SASFP	
Manoj Jain	Lead Financial Management Specialist	SARFM	
Kadija A. Jama	Program Assistant	CPFCF	
Sashikala Krishani Jeyaraj	Program Assistant	SASFP	
Luwisdura Lohitha Sanjee Karunasekera	Private Sector Development Specialist	SASFP	
Sumith Pilapitiya	Lead Environmental Specialist	SASDI	
Stephen F. Rasmussen	Lead Specialist	CGP	
Miriam Witana	Procurement Specialist	EASR1	
Supervision/ICR			
Nagavalli Annamalai	Lead Counsel	LEGPS	
Paul Joseph Breloff	Consultant	CGP	
Ludmilla Butenko	Country Manager	LCCPA	
Gautam J. Ivatury	Consultant	CGP	
Manoj Jain	Lead Financial Management Specialist	SARFM	
Sashikala Krishani Jeyaraj	Program Assistant	SASFP	
Luwisdura Lohitha Sanjee Karunasekera	Private Sector Development Specialist	SASFP	
Robert Keppler	Consultant	FFIFI	
Karunakaran Krishnaswamy	Consultant	SASSP	
Timothy Lyman	Lead Policy Officer	CGP	
Ignacio Mas	Consultant	LCSPF	
Sumith Pilapitiya	Lead Environmental Specialist	SASDI	
Stephen F. Rasmussen	Lead Specialist	CGP	
Najfa Shaheem Razee	Consultant	SACMV	
Ala Michael Tarazi	Senior Regulatory Specialist	CGP	
Supul Chamikara Wijesinghe	Financial Management Specialist	SARFM	
Miriam Witana	Procurement Specialist	EASR1	

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	US$ thousand (including travel and consultant costs)
Lending		
FY08	43.53	165.30
Total:		165.30
Supervision/ICR		
FY08	0.35	1.19
FY09	26.97	120.25
FY10	18.63	114.62
FY11	13.95	87.88
FY12	15.06	88.26
FY13	17.7	89.82
FY14	27.45	157.93
Total:	120.11	659.95

Annex 5. Beneficiary Survey Results
(if any)

Not Applicable

Annex 6. Stakeholder Workshop Report and Results
(if any)

Not Applicable

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

The Project consists of two major components: (i) Establishment the Maldives Interoperable Payment System (MIPS); and (ii) Building an enabling legal and regulatory framework and enhancing the capacity of the MMA to manage the MIPS. The MIPS has four components: (i) Real Time Gross settlements (**RTGS**); (ii) Automated Clearing House (**ACH)**; (iii) Mobile Payment System (**MPS**); and (iv) Electronic Fund Transfer (EFT) **Switch**. The technical aspects of all four components except Switch have been completed, including the user acceptance tests of three major components: ACH, RTGS, and MPS. The **RTGS** has been operational since April 2011 and is functioning as planned. One of the sub-components of the **ACH**, i.e. Direct Credit payments, has been launched successfully and is meeting commercial bank and customer needs. The majority of government payments are carried out through the RTGS and ACH, while aiming to discontinue the usage of cheques to make government payments by the end of this year. The government plans to make all payments through the automated payment system introduced under the MPBP project. The MPS, which would have enabled the citizens living outside Male Atoll to access finances services, has not been launched due to lack of interest by the participating stakeholders.

1) The RTGS processes large-value and time-critical or urgent inter-bank transactions in real time on a gross basis. For example, a customer's large-value payment to a third-party account held in a different bank can be processed immediately between the banks, reducing the processing time, rather than settled at the end of the day. If left to be settled at the end of the day, the interbank exposures will build up, increasing the risk if a participant is unable to meet these obligations to other banks that a ripple effect could occur, as the liquidity position of all banks will be affected, ultimately resulting in the inability to meet customers' demands. Thus, the RTGS system will reduce the risk in payment systems and also help banks to effectively manage their liquidity. It reduces risk by effecting actual settlement of funds between the banks in the MMA's books in real time before interbank exposures get too high.

Overall performance The MRTGS has been operational since April 2011 and has processed a total of 35,177 transactions in the year 2013. This includes 22,059 Maldivian rufiyaa (Rf) transactions and 13,118 U.S. dollar (US$) transactions. On average, MRTGS processes 100 transactions per day. July and April 2013 were the busiest months to date, with MRTGS processing 2,959 and 2,873 transactions during these months, respectively. The system experienced downtime of seven hours during this period.

All the banks have signed the system rules. Currently, a majority of the government payments for amounts above Rf 10,000.00 and US$5,000.00 are channeled through the MRTGS.

2) The ACH, on the other hand, is a session-based interbank automated clearing system for cheques, direct debits, and direct credits for small-value payments sent in batches. For example, direct credits, which are payments such as payroll and pensions sent to multiple recipients by a single party, can be sent in one file to the ACH instead of processing these payments one by one. Banks and businesses can reap huge benefits from this ACH system, as it provides a cheaper and easy alternative to sending and collecting payments

from the use of direct debits and direct credits. The collection of payments (direct debits) such as pension contributions, taxes, utilities, but also the disbursement of payments (direct credits) such as salary and payroll, pensions, etc. will be made much easier.

Overall performance The ACH direct credit service has operated successfully since it went live on February 2, 2012. During the year 2013, ACH has processed a total of 81,947 transactions, a figure that includes 51,895 Maldivian rufiyaa transactions and 30,052 transactions in U.S. dollars.

The other sub-system of ACH, the direct debit system, is yet to be implemented. This has been delayed due to the delay in finalizing the Operational Guidelines. The MMA has obtained the industry's feedback and is in the process of finalizing the Guidelines. In addition, MMA is planning to seek technical support from the Reserve Bank of India during the initial implementation stage to address operational issues.

Meanwhile, MMA is finalizing the Payments System Law to provide a broader and sounder legal framework for the payments system. The Law is expected to be submitted to the Parliament before the end of this year. Given the delays in enactment by Parliament (Majlis), it is difficult to establish an indicative timeline. This component is supported by all the banks.

3) Mobile Payment System (MPS)/Keesa:

Keesa is a branchless banking service that will allow subscribers to open bank accounts without visiting a bank branch simply by using mobile phones. This account allows subscribers to make payments from and receive payments to these accounts via mobile handsets and the Internet very conveniently.

Overall performance:

Final testing of the system commenced in November 2011 and was expected to be completed by December 4, 2011 under the revised Project Plan. However, testing was delayed as the software vendor rectified various issues in the MPS platform. During this time, the software vendor addressed connectivity issues with the Dhiraagu SMS server. The vendor resolved this issue on February 8, 2012. However, the platform experienced another SMS encoding issue, which again prevented testing. The issue was resolved on February 26, 2012. Some pending decisions within MMA regarding functionalities were made and communicated to Fundamo based on their protocols on new changes at that point in time. After resolution of the issues, the MMA team started testing the MPS in the test environment on March 13, 2012 with a plan to start production environment testing after a week. Deployment of the production system began on March 22, 2012. After correcting several more database-related issues, the project team commenced testing on the production system on April 5, 2012. MMA completed the initial user acceptance testing of MPS on August 22, 2011.

Issues:

The design and commencement of the MPS was based on the MOU signed between the banks and MMA. However, due to the non-participation of the only national bank in Maldives (Bank of Maldives – BML), even though the system has been technically completed, it cannot be made operational. Halfway into the project, BML adopted the view that this system would erode its market share and allow other banks to be more competitive, despite the fact that most other banks are more interested in serving their

niche clientele. Given that BML accounts for more than 50 percent of the market share of customers and has 26 branches, most in all Atolls Capital islands, its market share would not have been affected. In fact, MPS would have helped to further widen its outreach to the outer Atolls and would have attracted the unbanked population to the banking system. Many attempts were made to assure BML and accommodate its requests. MMA even brought in added functionalities at the technical level to minimize the cost of interfacing for the participating banks, such as various reporting systems and "Converter Gateway." However, BML insisted that it would affect their card business adversely and refused to participate, despite the MOU.

It is unfortunate that both the regulator (MMA) and the major shareholder (MOFT) were unable to convince the national bank to participate in a national system that was designed to help provide access to a large portion of the society. After the unsuccessful attempts to find a buyer for the MPS, the current Board of the MMA has decided that it would explore other options for utilizing the system to achieve its objective of reducing physical cash in the country and providing access to financial services in the outer Atolls. The mission is pleased to note that concerted efforts are being made to utilize the technical solution that was developed under the project.

Sale of Keesa (MPS):

MMA, with approval from its Board of Directors, had decided to sell the tested and ready MPS to an interested eligible party via a public tendering process, with the selected party taking over the role of MPS Operator and working with the bank(s) and mobile network operator(s) (MNOs) to offer this service to the public. The party that buys the system will then need to establish a call center, undertake a comprehensive marketing campaign, and establish an agent network. MMA had also received approval from the Ministry of Finance and Treasury regarding the sale of MPS. MMA announced the Request for Expression of Interest (EOI) for the sale of Keesa MPS on May 31, 2012. Interest was shown by several parties who attended the information session held on June 7, 2012. The EOI has been evaluated by MMA and the shortlisted parties were invited to submit bids after signing Non-Disclosure Agreements. The deadline for submission of bids was extended to October 21, 2012.

The only potential bidder, Dhiraagu, informed MMA that they were ultimately unable to bid for the MPS as they could not see a viable business case for implementing the system, and the financial viability of this product appeared to them quite unattractive. The estimated customer base and transactional volume does not come close to covering the investment of the Keesa system and operating costs. Therefore, according to Dhiraagu, the likelihood that Dhiraagu will launch mobile money as a stand-alone product is unlikely.

4. Interoperable EFT Switch:

The EFT Switch will establish interoperability of all card transactions in Maldives, by connecting all banks card systems to the Switch. The Switch will allow banks to provide

services to their customers using a widespread network of ATM and POS infrastructure throughout the country at a lower cost.

Issues:

There are many issues in implementing this component of the project. Banks showed little interest in running the EFT Switch as a common switch. Hence, the Switch could not be launched according to plans. Without the clear legal authority to mandate that all banks connect to the Switch, it became difficult for MMA to pursue its implementation. Some of the delays in connecting to banks' switches occurred because this required connecting to overseas systems managed in banks' head offices, and there are layers of communication channels involved in the process. In spite of this, MMA began testing the EFT Switch application using simulators.

The UAT commenced in March 2011. The Switch UAT proceeded reasonably well until issues in the system were identified and Montran's subcontractor Clear2Pay (C2P) became unwilling to provide the necessary support. C2P acquired Jware during 2010; in the second quarter of 2011 it stopped all its support to MMA due to a dispute between C2P and Jware/Aconite, from whom C2P took over the contract. Due to a difference of version between the MMA Switch and the banks' Switch, Gateway, a third-party protocol converter was introduced to overcome the obstacles in connecting with the MMA Switch. Resolving the issues that arose during the UAT took time, as issues had to be forwarded between the Switch and Gateway vendors.

The World Bank's May 2011 supervision mission noted in its Aide-Mémoire that the absence of the Switch would not compromise the basic features of the MPS. Implementation of the Switch requires careful planning by banks, the technical ability to connect to the Switch, as well as the MMA's clear legal authority to mandate participation by all banks.

Given the considerable investment made in this component, MMA made one last attempt by speaking with the banks to assess the possibility of using the Switch as a consortium of banks. The Governor met with all banks operating in the country, with the exception of BML and HSBC, and the bank representatives promised to speak with their management and return with responses**.** Following these negotiations with stakeholders, not a single positive response has been received to date, as none of the parties expressed an interest in the Switch system.

MIPS IT Infrastructure and Network:

The MIPS network was redesigned and reconfigured in December 2010 as the network proved to be unstable and did not conform to Payment Card Industry (PCI) standards. This change caused a three-month shift in the project plan. The network has proven to be stable since the changes were made. MMA IT staff completed User Acceptance Testing of the upgraded network and system architecture in March 2012 with a formal sign-off on March 24.

This complex network is designed to support four major applications, each used by multiple banking institutions. The vendor advised that MMA IT is currently not equipped to handle 24/7 systems given MMA's limited staff and breadth of knowledge. Hence, building the IT Team's capacity to support and manage the MIPS infrastructure was identified as an important area under this component. To this end, a three-month support and training program was conducted by HWG, an Italian Cisco Certified company, from June to September 2011. Furthermore, two staff from the project's IT team attended a short-term technical training course in Malaysia in October 2011.

MMA also sought assistance from Montran in developing an Operations Plan for ACH and RTGS under a Change Request, as internal project staff has limited resources and experience with real-time interbank operations. RTGS and ACH are business-critical systems, and these two systems require a proper operational plan to be in place to ensure business continuity and to eliminate service disruption. A draft Operations Plan was delivered to MMA in March 2012.

Disaster Recovery System:

The Disaster Recovery (DR) Data Center was relocated from the temporary location to its permanent location in January 2012. The DR Data Center setup is now ready, and data replication between Primary and DR Center began on March 15, 2012.

Regulatory Framework: Building an enabling legal framework to support the operation of the new systems is an element of the second component of the project. In view of achieving this, MMA issued the Payment Systems Regulation on April 7, 2011 and the Financial Transaction Reporting Regulation on July 20, 2011.

Payments Systems Regulation: The main purpose of this regulation is to recognize the RTGS, ACH, and Switch as "systems as such," so that the transfer orders within such systems are considered as final and irrevocable, provided that they were entered into prior to the opening of insolvency proceedings against the said banks. The regulation also protects the netting arrangements underpinning the ACH and Switch, and organizes the truncation of the cheques in connection with the processing of the latter within the ACHs. The regulation is issued under section 65 of the Maldives Banking Act.

Payments Systems Regulation is an interim solution that secures the overall legal soundness of the above-mentioned systems until such time as the Payment Systems Law is enacted. The regulation paved the way for RTGS to go live in April 2011 and the ACH to go live in February 2012.

Financial Transaction Reporting Regulation:

This Regulation is issued under sections 38 and 65 of the Maldives Banking Act, to prevent Maldives financial and payment systems from being used to promote Acts of Terrorism and Money Laundering, or financial services and products from being used to conceal Proceeds of Crime. Section 14 of this regulation covers mobile bank accounts.

Mobile Bank Account Agent Regulation has been drafted and is under review. Given that the future of MPS is uncertain, the issuance of this regulation has been postponed. Once MPS has been divested to a third party, MMA will issue this regulation in due time for MPS to go live.

Consumer Protection Regulation has been drafted and is under review.

Note:

The above-mentioned are the issues, challenges, successes, and experiences the MMA faced and gained in brief for the MIPS Project. We thank the World Bank, CGAP for the technical, legal, and financial support and assistance rendered for this national project that aims to establish at financial inclusion for Maldives.

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

Not Applicable

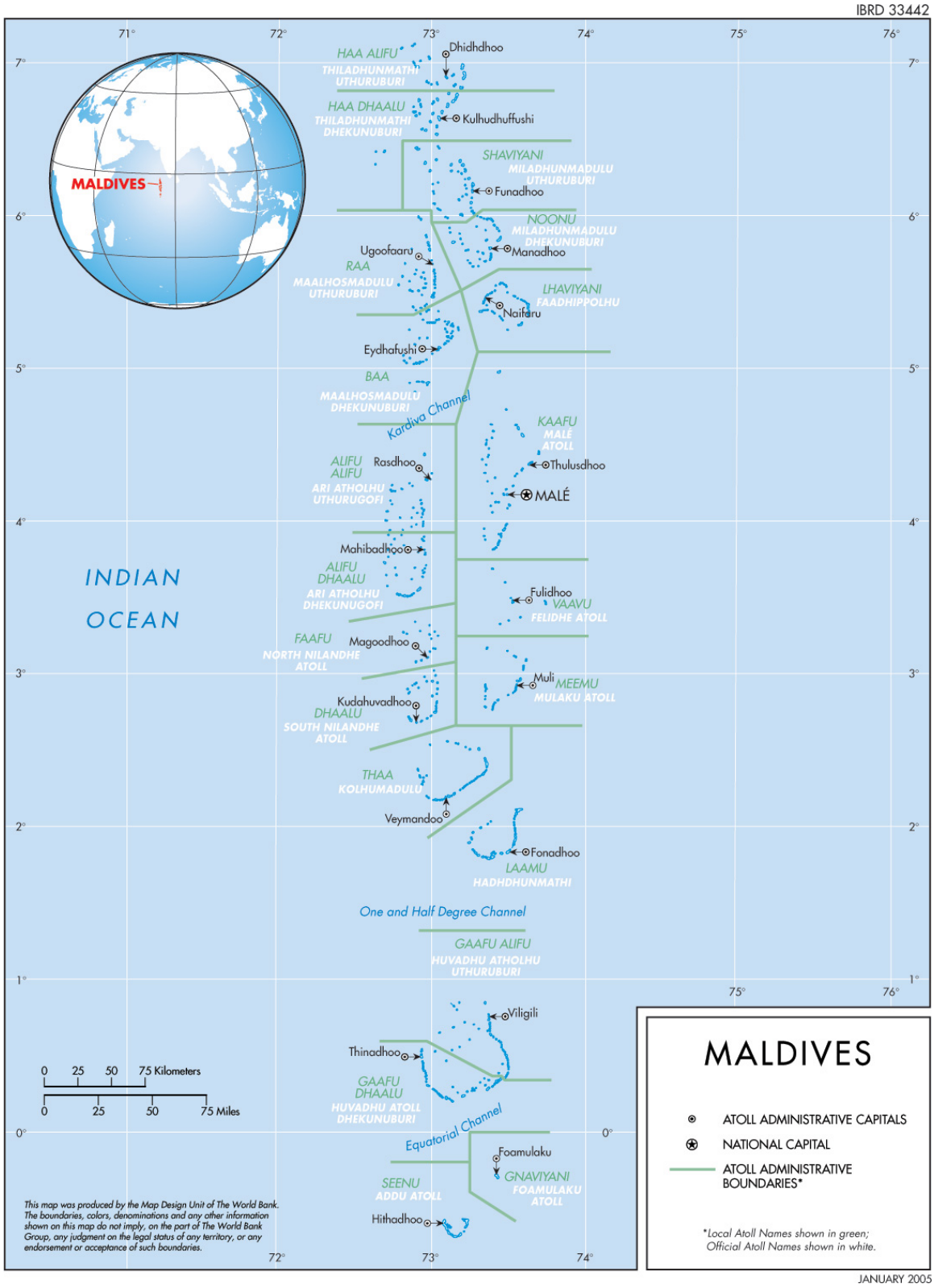
Annex 9. List of Supporting Documents

1. Developing a National Banking and Payment System with Mobile Phones: Vision Document and Project Framework. Developed Jointly by the Consultative Group for Assistance to the Poor and Maldives Monetary Authority, December 2006.
2. Project Appraisal Document on a Proposed Credit in the Amount of SDR4.9 million (US$7.7 million equivalent) to the Republic of Maldives for a Mobile Phone Banking Project, South Asia Region, March 11, 2008.
3. Financing Agreement: Mobile Phone Banking Project between Republic of Maldives and International Development Association, June 23, 2008.
4. Project Agreement: Mobile Phone Banking Project between International Development Association and the Maldives Monetary Authority, June 23, 2008.
5. The Maldives Mobile Phone Banking Project: Interim Report, Price Waterhouse Coopers, July 2009.
6. Restructuring Paper on a Proposed Project Restructuring of Maldives Mobile Phone Banking Project, May 4, 2012.
7. Restructuring Paper on a Proposed Project Restructuring of Maldives Mobile Phone Banking Project, December 15, 2013.
8. Maldives Mobile Phone Banking Project, Financial Monitoring Reports as at December 31, 2013.
9. Maldives Mobile Phone Banking Project, Aide Mémoire by Implementation Support Missions, 2008 to 2013.
10. Implementation Status and Results Reports on Maldives Mobile Phone Banking Project (P107981), Sequence 1 to 13, 2008 to 2013.

List of PowerPoint Presentations made by the Bank Implementation Support missions to various stakeholders from 2008 to 2013:

1. Maldives Inter-Operable Payment System (MIPS) – Concept and Overall Architecture, December 2007 (for discussion with Participant Banks and MNOs).
2. Financial Inclusion and Access to Finance through Mobile Phone Banking (Keesa).
3. Keesa Banking, It's Mobile.
4. Maldives Branchless/Mobile Banking Project – February 24, 2009. Presentation made by Nagavalli Annamalai, Lead Counsel, LEGPS, World Bank, at the FPD Forum, 2009.
5. Mobile Phone Banking. Presentation made to the Board of the Bank of Maldives Ltd., on June 20, 2010.
6. Maldives MPS: Business Issues Review, August 12, 2010 (for circulation).

MAP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Veymandoo
Fonadhoo
LAAMU
HADHDHUNMATHI
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HUVADHU ATHOLHU UTHURUBURI
Viligili
Thinadhoo
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MALDIVES
ATOLL ADMINISTRATIVE CAPITALS
NATIONAL CAPITAL
ATOLL ADMINISTRATIVE BOUNDARIES*
*Local Atoll Names shown in green; Official Atoll Names shown in white.
JANUARY 2005