



# Validation Report

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Reference Number: PVR-288  
Project Number: 35087  
Loan Numbers: 2119 and 2120  
December 2013

## Azerbaijan: Urban Water Supply and Sanitation Project

Independent Evaluation Department  
**Asian Development Bank**

## **ABBREVIATIONS**

ADB	–	Asian Development Bank
JSC	–	joint-stock company
MFF	–	multitranche financing facility
PCR	–	project completion report
PIU	–	project implementation unit
PMU	–	project management unit
SAWMA	–	State Amelioration and Water Management Agency
TA	–	technical assistance
WSS	–	water supply and sanitation

## **NOTE**

In this report, “\$” refers to US dollars.

## **Key Words**

adb, asian development bank, azerbaijan, independent evaluation department, infrastructure, lessons, performance evaluation, urban, water supply, sanitation, wastewater

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## PROJECT BASIC DATA

<b>Project Number:</b>	35087	<b>PCR Circulation Date:</b>	Dec 2011	
<b>Loan Numbers:</b>	2119 and 2120	<b>PCR Validation Date:</b>	Dec 2013	
<b>Project Name:</b>	<b>Urban Water Supply and Sanitation Project</b>			
<b>Country:</b>	Azerbaijan		<b>Approved</b> (\$ million)	<b>Actual</b> (\$ million)
<b>Sector(s):</b>	Water and Other Municipal Infrastructure Services	<b>Total Project Costs:</b>	39.89	45.70
<b>ADB Financing:</b> (\$ million)	<b>ADF:</b> 20.00	<b>Loan:</b>	30.00	30.70
		<b>Borrower:</b>	9.89	15.00
	<b>OCR:</b> 10.00	<b>Beneficiaries:</b>	0.00	0.00
		<b>Others:</b>	0.00	0.00
<b>Cofinancier:</b>		<b>Total Cofinancing:</b>	0.00	0.00
<b>Approval Date:</b>	7 Dec 2004	<b>Effectiveness Date:</b>	27 Oct 2006	27 Oct 2006
<b>Signing Date:</b>	29 Nov 2005	<b>Closing Date:</b> 2119 2120	30 Jun 2011 30 Jun 2011	30 Nov 2011 6 Feb 2012
<b>Project Officers:</b>	L. G. Sabyrova S. Rosenthal R. Mamatkulov S. A. Khan X. Ye S. A. Khan V. Padmanabhan M. Davila	<b>Location:</b> ADB headquarters ADB headquarters ADB headquarters ADB headquarters ADB headquarters ADB headquarters ADB headquarters ADB headquarters	<b>From</b> Dec 2004 Sep 2005 Jan 2006 May 2006 Oct 2006 Apr 2007 Dec 2007 Dec 2011	<b>To</b> Aug 2005 Dec 2005 Apr 2006 Sep 2006 Mar 2007 Nov 2007 Dec 2011 Feb 2012
<b>Validator:</b>	J. A. League, Consultant	<b>Peer Reviewer:</b>	J. Foerster, Evaluation Specialist, IED1	
<b>Quality Reviewers:</b>	C. Kim, Principal Evaluation Specialist, IED2 R. Vasudevan, Evaluation Specialist, IED1	<b>Director:</b>	W. Kolkma, IED1	

ADB = Asian Development Bank; ADF = Asian Development Fund; IED1 = Independent Evaluation Department, Division 1; IED2 = Independent Evaluation Department, Division 2; OCR = ordinary capital resources; PCR = project completion report.

## I. PROJECT DESCRIPTION

### A. Rationale

1. The water supply and sanitation (WSS) system in Azerbaijan was characterized by institutional weaknesses, inefficient operations, outdated and dilapidated infrastructure, and severe financial constraints. Consumers received poor quality and low levels of WSS services. Institutional capacity of town WSS agencies (*sukanals*) was limited. They were predominantly engineering-focused, with insufficient attention given to maintenance, operations, planning,

financial management, and commercial performance. The project<sup>1</sup> sought to address the key constraints by constructing and rehabilitating physical WSS infrastructure and by implementing institutional, managerial and financial reforms, and capacity building of the new utilities. Prior to the project, most of the WSS systems in the country were in a serious state of disrepair. In the secondary towns of Agdash and Goychay, service delivery was extremely poor. Many residents were receiving water only once or twice a week. Poor sanitation caused severe public health and environmental problems.

## **B. Expected Impact**

2. The project originally planned to provide 147,000 residential users, industries, and small businesses with potable water and reliable sewerage services with appropriate treatment for wastewater in the three towns in which about 50% of the populations were poor. At appraisal, about 80% of households in the three towns were expected to have access to a safe and reliable water supply and about 77% to sanitation services. The project aimed to reduce water-borne diseases in the project area by 20% upon completion.

## **C. Objectives or Expected Outcome**

3. The objective of the project was to improve the quality, reliability, and sustainability of WSS services, and improve management of water and sewerage systems in the three towns of Agdash, Goychay, and Nakhchivan. This was to be achieved through the provision of physical infrastructure and institutional reform. More specifically, the project sought the following physical targets: (i) increase access to safe and reliable water supply to 95% and access to improved sewerage services to 90% of Agdash and Goychay population; (ii) increase access to improved water supply to 70%, and improved sewerage services to about 67% of the population in Nakhchivan; (iii) decrease unaccounted for water from 70% to 25% in Agdash and Goychay by 2008, and to 50% in Nakhchivan by project completion; (iv) increase average collection rates from 60% to 90%; and (v) treatment of 90% of generated waste in waste stabilization ponds. Institutional reforms were expected to be achieved through the establishment of new water utilities as open joint-stock companies (JSCs) and creating in them operational and managerial capacity.

## **D. Components and Outputs**

4. At appraisal, there were two project components: physical infrastructure and institutional reform. Expected outputs of the physical component consisted of: (i) water extraction and intake facilities (6 new boreholes and 2 rehabilitated boreholes); (ii) water distribution system (about 170 kilometers [km] of water trunk mains and distribution pipelines); (iii) water treatment facilities (10 new elevated reservoirs and rehabilitation of 6 existing reservoirs); (iv) waste water treatment facilities (3 waste stabilization ponds ); and (v) sewerage network (about 120 km of new main and branch sewers and 4 sewerage pumping stations).

5. The expected outputs of the institutional component included (i) the establishment of new JSCs in the project towns, which would be registered and operational by year 2 of the

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<sup>1</sup> ADB. 2004. *Report and Recommendation of the President to the Board of Directors: Proposed Loans and Technical Assistance Grant to the Republic of Azerbaijan for the Urban Water Supply and Sanitation Project*. Manila.

project; (ii) JSCs' charters and corporate structures developed and boards of directors elected and trained by year 2 of project; (iii) a management contractor is selected, appointed, and employed for full scale operations during years 4–6 of the project; (iv) JSC staff trained during years 3–6 of the project; (v) billing systems installed by year 4 and financial management system effective by year 5; (vi) JSC staff to operate and manage the WSS systems independently by the end of the project; and (vii) by year 6, a comprehensive review of provision of WSS services in the project towns and the JSCs' performance undertaken.

## **E. Provision of Inputs**

6. The total project cost was estimated at \$39.9 million equivalent, comprising \$20.7 million equivalent in foreign exchange cost (52%) and \$19.2 million equivalent (48%) in local currency cost. The Asian Development Bank (ADB) was to provide two loans: (i) ADF loan of \$20.0 million; and (ii) an ordinary capital resources loan of \$10.0 million. Together these loans were expected to finance 75% of the total project cost. The government was to provide \$9.9 million to finance the remainder. Financing arrangements envisaged that a part of the ADF loan would be relent from the government to Azersu, which in turn was to on-lend it to the Agdash and Goychay JSCs while a portion of the ordinary capital resources loan was to be relent to Nakhchivan JSC.

## **F. Implementation Arrangements**

7. An interagency project steering committee was to be established to provide policy guidance and direction for project implementation. It was to be chaired by a high-level official from the Cabinet of Ministers. There were two executing agencies for the project. Azersu would be the executing agency for the Agdash and Goychay subprojects and the State Committee for Construction and Architecture for the Nakhchivan Autonomous Republic for the Nakhchivan subproject.

8. However, the project could not be implemented as appraised. The government and the project executing agencies were not in agreement with the project as designed. The implementation was delayed and dragged for about 4 years until the project was fundamentally restructured in 2008. A formal midterm review followed in 2009. The project has led to a set of investments under a multitranche financing facility (MFF)<sup>2</sup> that was approved in 2009 with a total cost of \$800 million of which up to \$600 million would be financed by ADB and the remaining by the Government of Azerbaijan.

9. The cost of the original project components increased by 218% from appraisal in 2004 to the project revision in 2008. Civil works costs increased from \$10.3 million (appraisal) to \$30.1 million (actual). In 2008, ADB approved a government request for a change in scope to address cost overruns between 2004 and 2008. The government proposed to exclude the rehabilitation and construction of water distribution and sewerage systems; and to focus on water intake and transmission facilities in the three project towns. This change resulted in civil works increasing by 40% from \$12.1 million to \$17.4 million. Cost of equipment and materials was reduced by about 40% from \$14.7 million to \$8.2 million.

10. Likewise, the institutional arrangements changed during implementation from what was planned at appraisal. The executing agency for Nakhchivan was changed from the State

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<sup>2</sup> ADB. 2009. *Proposed Multitranche Financing Facility–Water Supply and Sanitation Investment Program in Azerbaijan*. Manila.

Committee for Construction and Architecture to the State Amelioration and Water Management Agency (SAWMA). Instead of the Interagency Steering Committee, both Azersu and SAWMA provided leadership and supervision over the project. The project implementation units (PIUs) for Agdash and Goychay were absorbed by the project management unit (PMU) in Baku, but Azersu's procurement and technical departments eventually handled most of the implementation. All consultant procurement was done through Azersu, which caused some problems for SAWMA.

11. Virtually all the details of the earlier project underwent substantial changes. Outputs not achievable under the project were moved to the MFF. These include the following: 7 new reservoirs; 2 reservoirs to be rehabilitated; 160 km of new transmission mains; 120 km of main and branch sewers; 4 new sewerage pumping stations; and 3 waste stabilization ponds.

12. The project completion report (PCR) rated the related TA as *partially successful* because transaction advisory services were not carried out and the TA had a relatively limited impact because of government reluctance to implement the reforms. The TA was designed to assist in the implementation of project, which itself got changed. By the time the project scope was revised, the TA was over, thus, it could not deliver the expected outputs and outcome.

## II. EVALUATION OF PERFORMANCE AND RATINGS

### A. Relevance of Design and Formulation

13. The PCR<sup>3</sup> rated the project as *relevant*. It stated that the project design was consistent with the Azerbaijan government's development strategy and the ADB's country strategy and Strategy 2020. The PCR also cited that the project design was considered the best practice in the sector, which aimed to address its critical infrastructure and institutional problems. However, the PCR pointed out that the WSS sector in Azerbaijan was not ready for such wide-ranging and rapid reforms. The PCR asserted that lack of knowledge and understanding of the sector led to an over-ambitious design, which combined with increased project costs almost derailed the project.

14. There were a number of design limitations and the PCR considered the originally appraised project as not relevant. However, the PCR explained that the design challenges were successfully addressed through major changes in the implementation arrangements and project investment plan approved by ADB. The PCR asserted that these changes improved the relevance of the project. In its final form, the PCR rated the project as *relevant*.

15. This validation notes that the institutional arrangements proposed for the project did not fully take into consideration the existing political and administrative culture, technical capacity, and institutional preparedness to adapt wide-ranging reforms. Project documents showed that there was already expressed resistance to the proposed institutional arrangements during project preparation but the project team insisted on pursuing the institutional arrangements nonetheless. The PCR cited that implementing the original scope even without cost escalation would have been difficult.

16. Even after the project was redesigned and revised, it could not address the problems in the WSS sector in the three secondary cities. The revision did not allow improvements in the

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<sup>3</sup> ADB. 2011. *Completion Report: Urban Water Supply and Sanitation Project in Azerbaijan*. Manila.

water supply distribution system in Agdash and Goychay; and in the water treatment facilities in Nakhchivan. Thus, even with a revised scope, the project was *less than relevant*. It might be assessed differently if taken as a whole with the MFF but that is a different project altogether. This validation rates the project as *less than relevant*.<sup>4</sup>

## **B. Effectiveness in Achieving Project Outcome**

17. The PCR declared that most of the project outcomes in the design and monitoring framework were not achieved and rated the project as *less effective*. However, it stressed that actions taken in the revised project accomplished some of the outcomes and set the stage for attaining them under the MFF program.

18. Out of five expected outcomes defined in the design and monitoring framework, three were not achieved; one was partially achieved; and only one was achieved (collection rates in Nakhchivan increased to 80%). Of the 10 expected outputs, only two were achieved; four were partially achieved; and four were not achieved. This validation rates the project *less than effective*, same with the PCR.

## **C. Efficiency of Resource Use in Achieving Outcome and Outputs**

19. The project completion report (PCR) rated the project as *inefficient*. It argued that investments made under the project did not provide for complete systems and therefore have not yet generated economic benefits and financial revenues as planned. Furthermore, the PCR pointed out that reduced project scope resulted in reduced benefits while the costs escalated. The PCR noted that once the project was redesigned, all consultants, contractors, and suppliers performed satisfactorily.

20. This validation notes that the completed projects in Agdash and Goychay have not been operational because downstream investments have yet to be made under the MFF. In Nakhchivan, water made available for the project is not yet potable because additional investments are needed to complete the system as well. The original project costs were grossly underestimated.

21. After project revision in 2008, disbursements proceeded smoothly with both executing agencies completing disbursements before project closing. Delays were minimal. Major delays in the project schedule were primarily caused by delays in loan signing and loan effectiveness; delay in PMU and PIU staffing; and delay in procurement of design consultants. With hindsight, it is now clear that the project design was not acceptable to the government and executing agencies. Hence, they were reluctant to proceed with it. Once it had been restructured to their satisfaction, the capacity constraints disappeared. This validation also rates the project as *inefficient*.

## **D. Preliminary Assessment of Sustainability**

22. The PCR assessed the project as *most likely* to be sustainable. The PCR explained that the project provided the foundation for subsequent investments under the MFF and assets completed form part of a larger system expected to be completed in various phases or stages under the MFF.

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<sup>4</sup> The operations department did not agree with the revision of the rating in the draft validation report.

23. While this validation recognizes that significant achievements have been made after the 2008 project redesign in terms of physical outputs and improved institutional capacity, sustainability of the project is far from assured and definite. Institutional development has to continue to ensure efficient operations and maintenance, financial sustainability, and implementation of policy reforms in the sector. At this point, there is no solid and far-ranging evidence that sustainability is most definitely assured. This validation downgrades the project to *less than likely sustainable*.<sup>5</sup>

## **E. Impact**

24. The PCR rated project impact as *moderate*. The PCR explained that outcomes and outputs of the project were limited because of the redesign and revision of scope in 2008. The project focused on laying the groundwork for long-term development in the sector and did not intend to provide complete water supply services under the project.

25. This validation also rates the project impact as *moderate*. Though intake facilities were completed in Agdash and Goychay, these are not yet fully operational because the distribution network has yet to be constructed under the MFF. Nakhchivan's water supply has improved delivery to about 80% of the consumers but this is not yet potable due to the absence of a water treatment facility. The project should have benefited from ADB experience in the sector and should not have been designed so comprehensively and radically considering that this was to be the first ADB project in the country and its knowledge and familiarity with the sector was limited. While some of the project concepts were notable and were successfully implemented in other countries, transplanting such new concepts to a relatively less developed environment was not advisable. ADB should have anticipated that there would be serious problems based on its long experience dealing with similar situations in other countries. Unfortunately, ADB proceeded to approve the project as originally designed knowing that the capacity and capability of the two executing agencies were not assessed at appraisal; and that there was expressed reluctance on the part of government to support some institutional arrangements proposed for the project.

## **III. OTHER PERFORMANCE ASSESSMENTS**

### **A. Performance of the Borrower and Executing Agency**

26. The PCR asserted that the borrower and executing agencies had two distinct and opposing levels of performance. The PCR rated their performance at the start of the project as *unsatisfactory* and *satisfactory* after the project revisions and redesign in 2008. The PCR gave an overall rating of *less satisfactory* for borrower and executing agencies' performance.

27. This validation notes that there was significant delay before the loan became effective. Furthermore, one of the executing agencies (Azersu) showed reluctance in procuring consultants and providing staff for the PMU and PIU at the start of the project but performed

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<sup>5</sup> Footnote 4. The concerned operations department provided additional information that the Government remains committed to improve the capacity of the utilities to efficiently operate and manage the system with reduction of physical and commercial losses on a cost recovery principle. To this end, the Government has taken positive steps in the direction of restructuring utilities. The Government appointed experienced project management staff and utility operations staff to improve Azersu's operations, enabling it to deliver efficient services to the customers. The Government also increased WSS tariffs on an average by 40% across various customer groups on 1 February 2011.



much better after the project was redesigned and revised. The PCR contended that the borrower performed adequately and Azersu undertook procurement without problems after project revision and redesign. On the other hand, SAWMA performance was satisfactory from the start as the PCR noted. All SAWMA procurement was done on time and the agency established a good working relationship with the ADB team. It is apparent from the PCR that there was already resistance and reluctance on the part of the executing agency, Azersu, to support the project as originally designed. This contributed to their less than satisfactory performance at the start of the project. Azersu's performance improved after the project was revised to conform to their preferred design, particularly in terms of institutional arrangements for project implementation. This validation also rates the performance of the borrower and executing agencies as *less than satisfactory*.

## **B. Performance of the Asian Development Bank**

28. The PCR rated ADB performance as *less satisfactory* primarily because of the frequent changes in project officers during the course of project implementation. The PCR declared that such frequent changes hampered the necessary continuity needed to address initial implementation problems. However, the PCR acknowledged that ADB performance improved after project revision and redesign in 2008.

29. ADB has extensive experience in the sector and should have learned from it in preparing a project of this nature. The project was overly designed and too innovative for a country that ADB was not fully familiar with and had limited knowledge of the conditions prevailing in the sector. There was expressed reluctance if not resistance to the project concept during project preparation but ADB allowed the consultants to proceed and approved the project. ADB must have been aware that the physical condition of existing assets was not properly assessed and that the capacity of the executing agencies was not evaluated during appraisal yet it proceeded to approve the project as designed. This validation agrees with the PCR and also rates ADB's performance as *less than satisfactory*.

## **C. Others**

30. The PCR noted that both environmental control and safeguard measures were implemented effectively under the project; project activities did not result in any long-term adverse environmental or social safeguards impact. There were no assessments relating to gender, governance, anticorruption activities, and fiduciary aspects.

# **IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS**

## **A. Overall Assessment and Ratings**

31. Overall, the PCR and this validation rate the project as *less than successful* and concur on most of the criteria ratings but differed on the ratings for relevance and sustainability (see table). The PCR rated the project as *relevant* while this validation considers the project *less than relevant*. The PCR considers the project as *most likely* to be sustainable but the validation rates it only as *less than likely* to be sustainable.

32. Taken by itself, the project was not well conceived and would have been unsuccessful had it not been revised and redesigned in 2008. Due diligence in terms of assessing institutional capacity of executing and implementing agencies; readiness and willingness of borrower and agencies to adopt innovative project concepts; and actual conditions and status of the sector

must be undertaken so that project formulation is well grounded on reality and actual conditions. The cost estimates did not match the scope of investments in the original design. The PCR notes that these factors have been experienced in previous ADB projects/programs but it seems that lessons have not been fully learned.

33. However, the pragmatic approach taken in 2008 when the project was redesigned and revised enabled the progress in implementation. Revising the project design and recasting it as an initial phase of a multiphased project provided a realistic and more attainable approach to development of the WSS sector in Azerbaijan particularly in secondary cities. Supporting succeeding albeit incremental investments through an MFF could turn out a better approach to ensure that investments, institutional capacity, financial resources, and operations and maintenance (O&M) capability develop in parallel over time in a consistent and sustainable manner. The project did not achieve the outcomes and outputs it was originally expected to attain but these could be eventually met under the MFF.

### Overall Ratings

Criteria	PCR	IED Review	Reason for Disagreement/Comments
<b>Relevance:</b>	Relevant	Less than relevant	Though the project was redesigned and revised in 2008, the project still did not address the problems that it originally set out to do (paras. 14–16).
<b>Effectiveness in Achieving Outcome:</b>	Less effective	Less than effective	
<b>Efficiency in Achieving Outcome and Outputs:</b>	Inefficient	Inefficient	
<b>Preliminary Assessment of Sustainability:</b>	Most likely	Less than likely	The project encountered serious implementation problems. Institutional capacity has to be developed further and this is not yet fully assured (para. 23).
<b>Overall Assessment:</b>	<b>Partly successful</b>	<b>Less than successful</b>	
<b>Borrower and Executing Agency:</b>	Less satisfactory	Less than satisfactory	
<b>Performance of ADB:</b>	Less satisfactory	Less than satisfactory	
<b>Impact:</b>	Moderate	Moderate	
<b>Quality of PCR:</b>		Satisfactory	Refer to para. 39.

ADB = Asian Development Bank, IED = Independent Evaluation Department, PCR = project completion report.

Note: From May 2012, IED views the PCR's rating terminology of "partly" or "less" as equivalent to "less than" and uses this terminology for its own rating categories to improve clarity.

Source: ADB Independent Evaluation Department.

## B. Lessons

34. The PCR identified these four key lessons, which should serve as basic guidelines for succeeding projects not only in the country or in the sector but in all ADB projects: (i) understanding the sector environment in new member countries is important; (ii) use phased

reform programs; (iii) use conservative cost estimates and ensure sufficient funding; and (iv) ensure the government understands the proposed project.

35. This validation agrees with these lessons as explained in previous sections. Due diligence is imperative. Project design concepts can be ideal, novel, and innovative but it ultimately depends on the capacity of executing and implementing agencies and their staff to implement and manage the project. Projects should be designed to fit institutional and technical capacity; financial resources; and readiness and willingness of borrower, executing agencies, and beneficiaries to accept and implement the project concept. Consultants and ADB may have the best intentions for designing best practice, top of the line project concepts but they must ensure that borrower, executing agencies, and beneficiaries concur with their ideas and understand the concepts they are espousing.

### **C. Recommendations for Follow-up**

36. The PCR had very sound recommendations, which take off from the lessons it identified. Foremost of these recommendations are: (i) use reforms that match the country's level of development and capacity; (ii) increase the scope of engineering work at project preparation to improve technical information and knowledge for project design; and (iii) the ADB team that processed the project should also implement the project at least for the first 2 years.

37. This validation concurs with the recommendations of the PCR. It was clear that the public-private partnership, the management contract concept, and the JSC as initially proposed were premature. Scoping of the extent of the problems of existing physical WSS assets were not adequately conducted and contributed to the design issues met during implementation. Resident mission staff can play a vital role in ensuring continuity, timely identification of problems, greater understanding of issues on the ground, and prompt action.

## **V. OTHER CONSIDERATIONS AND FOLLOW-UP**

### **A. Monitoring and Evaluation Design, Implementation and Utilization**

38. The PCR stated that the project did not require any specific monitoring or follow-up because it is followed by the MFF and monitoring will be undertaken through the MFF.

### **B. Comments on Project Completion Report Quality**

39. This validation considers the PCR as *satisfactory*. The PCR provided adequate evidence and analysis to substantiate its ratings. The validation however has two downgrades in the criteria ratings, which the PCR should have considered. Nonetheless, the PCR was consistent with the ADB Guidelines for preparing PCR and Performance Evaluation Reports for Public Sector Operations and Nonsovereign Operations. It did a satisfactory analysis of the economic internal rate of return (EIRR) and financial internal rate of return (FIRR). It identified very useful lessons and provided sound recommendations. Lastly, the PCR presented information in a clear, succinct, and consistent manner.

### **C. Data Sources for Validation**

40. Data sources for validation were report and recommendation of the President; the PCR; Management Review Meeting and Staff Review Committee documents; supervision reports

including loan review mission reports; and communications with project officers and executing agency staff.

**D. Recommendation for Independent Evaluation Department Follow-up**

41. This validation concurs with the recommendation of the PCR to conduct the project performance evaluation report after the completion of the MFF. The project outcomes, benefits, and impact will not be fully realized until after the completion of the MFF.