

Validation Report
January 2019

India: Rajasthan Urban Sector Development Investment Program (Tranche 1)

Reference Number: PVR-557
Program Number: 40031-023
Loan Number: 2366



Raising development impact through evaluation

ABBREVIATIONS

ADB	–	Asian Development Bank
DMF	–	design and monitoring framework
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
IPIU	–	investment program implementation unit
IPMU	–	investment program management unit
MFF	–	multitranche financing facility
O&M	–	operation and maintenance
PCR	–	project completion report
PHED	–	Public Health Engineering Department
RRP	–	report and recommendation of the President
RUIDP	–	Rajasthan Urban Infrastructure Development Project
RUSDIP	–	Rajasthan Urban Sector Development Investment Program
SWM	–	solid waste management
TA	–	technical assistance
ULB	–	urban local body

NOTE

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

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PROJECT BASIC DATA

Project Number	40031-023	PCR Circulation Date	27 July 2017	
Loan/Grant Number	2366	PCR Validation Date	Dec 2018	
Project Name	Rajasthan Urban Sector Development Investment Program (Tranche 1)			
Sector and subsector	Water and other urban infrastructure and services Transport	Urban flood protection Urban policy and institutional and capacity development Urban sewerage Urban solid waste management Urban water supply Urban roads and traffic management		
Strategic agenda	Environmentally sustainable growth Inclusive economic growth			
Safeguard categories	Environment		B	
	Involuntary resettlement		B	
	Indigenous peoples		B	
Country	India		Approved (\$ million)	Actual (\$ million)
ADB Financing (\$ million)	ADF: 0.00	Total Project Costs	75.00	63.54
	OCR: 60.00	Loan/Grant	60.00	50.02
		Borrower	15.00	13.52
		Beneficiaries	0.00	0.00
		Others	0.00	0.00
Cofinancier	-	Total Cofinancing	0.00	0.00
Approval Date	8 Nov 2007	Effectiveness Date	16 Apr 2008	28 Feb 2008
Signing Date	17 Jan 2008	Closing Date	30 Jun 2013	22 May 2015
Project Officers	S. Wendt G. An D. Margonzstem P. Srivastava	Location ADB headquarters ADB headquarters ADB headquarters India Resident Mission	From Nov 2007 May 2008 Jan 2010 Apr 2010	To Apr 2008 Dec 2009 Apr 2010 present
IED Review Director Team Leader	N. Subramaniam, IESP G. Kilroy, Evaluation Specialist, IESP			

ADB = Asian Development Bank, ADF = Asian Development Fund, IED = Independent Evaluation Department, IESP = Sector and Project Division, OCR = ordinary capital resources, PCR = project completion report.

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I. PROJECT DESCRIPTION

A. Rationale

1. The Asian Development Bank (ADB) supported the Rajasthan Urban Infrastructure Development Project (RUIDP),¹ which improved basic urban services and provided capacity development to six urban local bodies (ULBs) in Rajasthan.² Nevertheless, the availability of urban services in Rajasthan's other urban centers was inadequate because of population pressure, influx of tourists, lack of adequate funding, and poor management and operation of public services. The Rajasthan Urban Sector Development Investment Program (RUSDIP)³ was designed to assist the state in increasing economic growth, reducing poverty, and sustaining improvements in urban environment and in the quality of life in 15 medium-sized ULBs. The RUSDIP was designed as a multitranche financing facility (MFF) and aimed to deliver essential municipal infrastructure and services, including improvements in water supply, wastewater management, solid waste management (SWM), urban drainage, urban transport and roads, and social infrastructure. It also aimed to provide capacity development and program management support. The MFF consisted of three tranches and the initial RUSDIP project focused on three ULBs—Alwar, Jaisalmer, and Jhalawar—Jhalarapatan—as tranche 1 of the investment program.⁴

2. The investment program, including project 1 (financed by tranche 1), comprised the following: (i) Part A—urban infrastructure improvements, and (ii) Part B—capacity development and implementation support. The entire program had an estimated cost of \$390 million funded by an ADB loan of \$273 million and a Government of Rajasthan contribution of \$117 million. Project 1 was estimated to be \$75 million funded by a \$60 million loan from ADB's ordinary capital resources and supported by the state government's contribution of \$15 million.

3. The use of the MFF modality was appropriate since there was a clear strategic context provided by a sector road map, and the conditions were right for a long-term urban sector partnership with ADB.⁵ The modality will allow flexibility in making investment decisions according to what the ULBs require within the sector road map. This modality will also allow flexibility in making investment decisions according to the needs and constraints of the investment program of the ULBs—not according to predefined investment requirements in a conventional form of assistance. The MFF was to support the implementation of ongoing institutional and financial reforms and to build the capacity of urban institutions and local bodies with individual loans—in tranches linked to reform targets over a realistic time frame.⁶

¹ ADB. 1998. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to India for the Rajasthan Urban Infrastructure Development Project*. Manila.

² ADB Independent Evaluation Department. 2013. *Validation Report: Rajasthan Urban Infrastructure Development Project in India*. Manila.

³ ADB. 2007a. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to India for the Rajasthan Urban Sector Development Investment Program*. Manila.

⁴ Project 1 followed the structure of the overall investment program but did not include a cultural heritage program.

⁵ By supporting the implementation of the ongoing institutional and financial reforms, the investment program would help to build a long-term partnership among ADB, the Government of India, and the state Government of Rajasthan.

⁶ In line with current government policies, a gradual transition to a more efficient and accountable system of urban infrastructure provision and service delivery was envisaged. The Government of Rajasthan and the ULBs were to be assisted in strengthening the reforms already initiated by the Government of India and the state government, such as those in (i) urban finance and governance reforms, for more sustainable service delivery; and (ii) sustainable revenue generation through rationalized user charges and urban-based taxes.

B. Expected Impacts, Outcomes, and Outputs

4. The design and monitoring framework (DMF) was prepared for the overall MFF investment program. No separate DMF for project 1 was prepared. For the evaluation of project 1, the impact and outcome targets were apportioned to the project's three ULBs.

5. The intended impact of project 1 was the same as that of the investment program: (i) increased economic growth and reduced poverty, and (ii) sustained improvement in urban environment and in the quality of life in the initially identified ULBs in Rajasthan. The intended outcomes were (i) increased access to sustainable urban infrastructure and services for 1.6 million people in the program's ULBs by 2014, and (ii) improved capacity and sustainable management of urban services in the program's ULBs by 2014. The intended outputs were to have the water supply, sewerage and sanitation, SWM, urban drainage, urban transport and roads, social infrastructure, capacity development, and program management implemented. The project completion report (PCR) derived the output performance indicators and targets for each of the three ULBs from the activities and milestones in the DMF.⁷

C. Provision of Inputs

6. Tranche 1 of the MFF was approved on 8 November 2007 and the loan was effective on 28 February 2008, earlier than the planned date of 16 April 2008. The loan closed on 22 May 2015 after two extensions, almost 2 years after the target date of 30 June 2013. The delayed closing date enabled project 1 to optimize loan utilization by completing additional sewerage subprojects.⁸

7. The actual project cost was \$63.5 million or \$11.5 million less than the estimated \$75.0 million. Civil works were expected to cost \$33.8 million but the actual was \$43.3 million, with \$4 million undisbursed from the revised allocation of \$47.3 million. Expenditure on capacity development and program management was \$6.7 million or \$10.6 million less than the planned \$17.3 million since much of the work were transferred to subsequent MFF tranches.⁹ The originally unallocated sum of \$8.9 million for price and physical contingencies combined was cancelled. Overall cost differences were attributed to these adjustments, currency exchange fluctuations, and interest rate changes while financing charges decreased by \$6.5 million because of the lower interest rates.¹⁰

8. To optimize the loan, ADB approved in September 2008 a reallocation of \$18.5 million to urban infrastructure improvements, representing 24.7% of the total project cost—a major change in scope.¹¹ In March 2011, ADB approved a minor change in scope by increasing the coverage of two sewerage subprojects—to utilize contingencies and loan savings. These changes increased the share of the infrastructure improvement component by 28% from \$33.8 million at

⁷ ADB. 2017a. *Completion Report: Rajasthan Urban Sector Development Investment Program—Tranche 1*. Manila. Para. 10 explains the method of deriving the targets.

⁸ While most works were completed by loan closure, two water supply works and three wastewater works were still not complete due to contractors' poor performance.

⁹ The training activities were decided to be taken up under subsequent tranches reflecting the actual training program implementation schedule.

¹⁰ For the PCR, the local costs incurred until 30 July 2015 were converted to US dollars at the exchange rate on the date of disbursement, and local costs incurred between 31 July 2015 and 31 December 2016 were converted at an average exchange rate of Rs65 = \$1. At appraisal, the exchange rate of Rs42.1 = \$1 was estimated for use throughout the program period.

¹¹ ADB. 2008a. *Rajasthan Urban Sector Development Investment Program (RUSDIP), Project 1—Amendments to the Loan Agreement*. Manila. (Loan 2366-IND)

appraisal to \$43.3 million at completion.¹² After the midterm review in July 2012, ADB approved a further minor change in scope.¹³

9. Consulting services were planned to cost \$13.2 million and of this amount, \$5.8 million was disbursed. A total of \$7.4 million was cancelled and \$0.05 million was undisbursed. The project environment category was B, and short resettlement plans were required only for wastewater and water subprojects. All 35 households affected by the project were either compensated or were being compensated in 2017 in accordance with the agreed entitlement matrix.¹⁴ The indigenous peoples' categorization was B but since none of them were affected, it would have been appropriate to re-categorize it under C (footnote 15, para. 1). The investment program was prepared jointly by Rajasthan and ADB. The state government used consultants already hired for RUIDP to carry out urgent preparatory work, and ADB used a bridging technical assistance (TA to mobilize consultants who will assist the state government).¹⁵ The bridging TA contributed to a shortened investment program preparation period. The bridging TA delivered its intended outcomes of (i) improving project implementation readiness, (ii) strengthening local capacity and ownership, and (iii) enhancing the efficiency of implementation. The TA project gave itself an overall rating of successful.¹⁶

D. Implementation Arrangements

10. Project implementation was carried out as planned and arrangements were appropriate. The Local Self Government Department of the Government of Rajasthan was the executing agency while the Investment Program Management Unit (IPMU), under the same department, was the implementing agency. The IPMU was headed by a project director. An interministerial state-level empowered committee, chaired by the minister of urban development and local self-governance, with the project director as member secretary, provided policy guidance and coordination.¹⁷ A work finalization committee, chaired by the principal secretary of urban governance, reviewed and endorsed subproject appraisal reports prior to submission to ADB. Investment program implementation units (IPIUs) were set up in each project town, concerned agencies, and departments. City-level committees, chaired by district collectors, provided guidance to IPIUs on actions to improve project performance. The committees also functioned as grievance redress committees.¹⁸ The IPMU and IPIUs were assisted by an investment program management consultant firm, and three design and supervision consultant firms for the preparation of design documents, in managing contract tendering, and in supervising construction works. A community action and participation program consultant firm, and an investment program performance and management system consultant firm took care of training and monitoring.

¹² ADB. 2011. *RUSDIP, Project 1—Minor Change in Scope and Reallocation of Loan Funds—Amendment to Loan Agreement*. Manila (Loan 2366-IND).

¹³ This resulted in increased allocation for urban infrastructure development, reductions in capacity development and investment program management and equipment, and cancellation of consulting services for resettlement and land acquisition. The services of a nongovernment organization for resettlement and land acquisition were no longer required. These were effectively handled by the investment program management unit (IPMU), with the support of investment program management consultants and community action and participation program consultants.

¹⁴ ADB (Independent Evaluation Department). 2018. *Safeguard Performance and ADB's Safeguards Work Quality: RUSDIP Tranche 1* (internal).

¹⁵ ADB. 2006. *Technical Assistance Cluster to India for Project Processing and Capacity Development*. Manila.

¹⁶ ADB. 2009. *Technical Assistance Completion Report: Project Processing and Capacity Development*. New Delhi.

¹⁷ Secretaries of infrastructure, urban governance, local self-governance, finance, planning, tourism, art and culture, and the Public Health Engineering Department were members.

¹⁸ A community development officer was appointed in each project ULB to coordinate the IPIU activities with the communities, particularly on project awareness and in the generation of social impacts. The city-level committees also acted as grievance redress committees and met at regular intervals.

11. Of the 42 loan covenants, 39 were complied with. The project partially complied with the institutional and financial improvement action plan covenant. While the enhancement of water, sewerage tariff, and infrastructure development tax or urban development tax under institutional and financial improvement action plan were achieved, sewerage and solid waste charges were not levied.¹⁹ It is intended to comply with the covenant that is related to reducing unaccounted-for-water to improve the distribution network but this was not possible during the project implementation period.²⁰

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

12. The PCR rated the project relevant. It confirmed that it was relevant to the government's development objectives and to ADB's country and sector strategies, both at appraisal and at completion. At appraisal, it was consistent with India's and Rajasthan's Tenth Five-Year Plans (2002–2007).²¹ The project was aligned with the ADB's Country Strategy and Program for India (2003–2006), and supported the Country Strategy and Program update (2004–2006).²² The project was also aligned with ADB's 2001 Water for All Policy.²³ Though the project predated ADB's Strategy 2020, it remained relevant to the strategy, with its focus on infrastructure-led growth, poverty reduction, environment protection, and institutional strengthening.²⁴ The project was aligned with ADB's Water Operational Plan (2011–2020).²⁵

13. The project was aligned with the Government of India's 5-year plans and to Rajasthan's 12th 5-year plan.²⁶ It focused on improved infrastructure, governance, and environment as contributory to achieving the national gross domestic product growth target of 8%–9% per annum under the 11th and 12th 5-year plans.²⁷ It was also in line with state priorities for poverty reduction through improved access to potable water and sanitation, good governance, and private enterprise participation. The project remained relevant to ADB's policy focus for India in the areas of inclusive growth, infrastructure, and environmental sustainability.²⁸

¹⁹ The state government argued in its PCR that tariff revision is only politically possible after services have been improved. The government also confirmed that it intended to introduce SWM tariffs.

²⁰ Water supply was not conceived as a 24/7 supply with district metering areas. Project interventions were limited to rehabilitating old leaking pipelines and laying of new ones in selected areas of the three project 1 ULBs. Hence, the covenant related to the unaccounted-for-water reduction program was unrealistic. Currently, water supply schemes with 100% metered house connections were sanctioned under Government of India's Atal Mission for Rejuvenation and Urban Transformation scheme. The unaccounted-for-water reduction program is proposed to be achieved by 2018.

²¹ Government of India, Planning Commission. 2002. *Tenth Five-Year Plan, 2002–2007*. New Delhi; and Government of Rajasthan, Planning Department. 2002. *Tenth Five-Year Plan, 2002–2007*. Jaipur.

²² ADB. 2003. *Country Strategy and Program: India, 2003–2006*. Manila; and ADB. 2003. *Country Strategy and Program Update: India, 2004–2006*. Manila.

²³ ADB. 2001. *Water for All: The Water Policy of the Asian Development Bank*. Manila.

²⁴ ADB. 2008b. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

²⁵ ADB. 2011. *Water Operational Plan, 2011–2020*. Manila.

²⁶ Government of Rajasthan, Planning Department. 2012. *Twelfth Five-Year Plan, 2012–2017*. Jaipur.

²⁷ Government of India, Planning Commission. 2007. *Eleventh Five-Year Plan, 2007–2012*. New Delhi; and Government of India, Planning Commission. 2012. *Twelfth Five-Year Plan, 2012–2017*. New Delhi. <http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>.

²⁸ ADB. 2013a. *Country Partnership Strategy: India, 2013–2017*. Manila; and ADB. 2013b. *Country Operations Business Plan: India, 2013–2015*. Manila.

14. The reallocation of \$18.5 million to urban infrastructure improvements was a major change in scope (footnote 14), mostly attributable to unforeseeable external events (para. 7), but this did not affect the relevance of the original design. Other minor changes in scope (para. 8) optimized the use of loan funds and consolidated the relevance of the project.

15. The project design was relevant, although there were serious design flaws. The PCR was candid in recognizing that the design would have been better had it aimed for continuous water supply (24 hours per day, 7 days a week) and included measures to address nonrevenue water. The financing of household sewerage connections also should have been considered. Although the report and recommendation of the President (RRP) noted that the investment program responded to these issues in the design of its subprojects, there was no evidence of this in the DMF indicators. The difficulties of achieving the covenants that were not achieved or fully achieved should have been foreseen in the design process and have them worded differently. The DMF for project 1 was not prepared at appraisal and was only developed at the time of the PCR. These design flaws had a serious impact on achieving the outcomes and are discussed under effectiveness. Overall, this validation assesses the rating relevant.

B. Effectiveness in Achieving Program Outcomes and Outputs

16. The PCR rated the project effective in achieving its outcome targets, arguing that targets for over 80% of project 1 investments were achieved and only the SWM component was ineffective. However, this validation disagrees with this assessment. Of the 11 applicable outcome performance targets, only seven were achieved. Accomplishments and shortfalls were reported as follows: *First*, in water supply (one target achieved) where 520,000 people (94.9% population of the ULBs) were provided with treated piped water supply with an average supply of 113 liters per capita per day against a target of 490,000 people with at least 100 liters per capita per day. *Second*, in wastewater management (one target achieved, one not achieved, and one not applicable) where (i) 100,000 people against a target of 540,000 in Alwar and Jaisalmer were provided with improved sewerage services (defined at appraisal as total and appropriate sanitation) through the construction of sewage treatment plants but the household connections is still very low,²⁹ so the benefits are not yet accrued; (ii) since the ULBs are yet to achieve a population density of 150 households/hectare and an average water supply of 135 liters per capita per day was not achieved, this target is redundant and not applicable³⁰; and (iii) less wastewater is being discharged to water bodies—30 million liters per day treatment capacity has been created for a 25-year design period, although current flow is only 5–6 million liters per day due to the lack of progress on household connections, so potential environmental gains are yet to fully accrue. *Third*, solid waste management (one target not achieved), where sanitary landfills were provided but are not functional as planned and composting plants were not achieved. *Fourth*, urban drainage (one target achieved for one town), where flooding was reduced in Jaisalmer. *Fifth*, urban transport and roads (one target achieved for one town), where improved traffic flow was achieved (with 0.85-kilometer two-lane road over bridge constructed to decongest the Itarana railway-level crossing in Alwar and now takes less than 2 minutes to cross the railway crossing as compared to the earlier 5–15 minutes. *Sixth*, social infrastructure (one target achieved), where 66,705 people in identified slums in the ULBs benefited from improved basic urban services and living conditions against a target of 60,000 people. *Seventh*, improved institutional capacity (two targets achieved two, targets not achieved), where the (i) ULBs finance operation and

²⁹ Management argues that the target for household sewerage connections is 30% of target population, and that at the time of this evaluation some 60% has been achieved. IED's position is that outcomes must be available to the intended beneficiaries and that the DMF target is total and appropriate sanitation and therefore not achieved.

³⁰ Management argues that this indicator has been fully achieved.

maintenance (O&M) costs of all urban services from internal revenue streams and the state's budget; (ii) ULBs do not yet have adequate revenue sources to meet all their expenses, thus, state allocations continue to augment local taxes and levies to meet their expenses); (iii) project assets were handed over to the ULBs and/or respective line agencies upon completion; and (iv) training and capacity-building activities will only be undertaken in subsequent tranches, therefore, the ULBs do not yet have adequately trained and skilled human resources to run and maintain urban facilities and services. Lack of sufficient progress on these institutional objectives are of concern since the major risks identified in the program's RRP were the commitment of state and ULBs to institutional change and financial reforms.

17. Of the 31 output performance targets, 21 were achieved, 7 were not achieved, and 3 were not applicable. The seven outputs that IED found their targets as not fully met were (outputs were numbered sequentially as per the PCR) as follows: (i) Water supply, Output 4—the PCR assessed this partly achieved due to lesser-than-expected targets for rising mains; (ii) Sewerage and sanitation, Output 11—the PCR assessed this output partly achieved as only 2,290 households³¹ were connected to the sewerage network; (iii) Solid waste management, Output 14—the PCR assessed this output partly achieved as the landfill were built, but are not functioning; (iv) Urban drainage, Output 16—the PCR assessed this output partly achieved due to lesser-than-expected targets for the length of drains; (v) Capacity development, Output 21—the PCR assessed this output on training and capacity-building activities not achieved, as these are to be undertaken in subsequent tranches; (vi) Capacity development, Output 21—the PCR assessed this output achieved, but IED disagrees and considers it as double-entry accounting and related management systems have not yet been introduced in Alwar, which is the largest ULB; and (vii) Capacity development, Output 26—the PCR assessed this output achieved, but IED disagrees as the PCR only noted that the contractors were mandated to develop operational manuals and train staff, while they continue to operate and maintain the plant for 5 years.

18. Environmental assessments were undertaken and reports for all subprojects were approved by ADB. Two sewerage and sanitation subprojects were classified as category B for environmental safeguards. The objectives of the environmental management plans were largely achieved. The project safeguard assessment confirmed that the implementation of the environmental management plan was satisfactory but with some deficiencies in particulate matter emissions and water quality monitoring, waste and sanitary management at work camps, occupational health and safety, and noise (footnote 15, para. 5). The required forest department clearances, consents-to-establish and consents-to-operate were obtained, except for the consent-to-operate for the Jaisalmer solid waste landfill site.³² Environmental and social monitoring reports were prepared and regularly disclosed, including to ADB, during project implementation. Public consultations were carried out regularly to disseminate project benefits, identify issues, and address problems encountered by the public during construction. Grievance redress committees were established.³³

³¹ Management have indicated that RUIDP confirmed that 105,000 population were connected to the sewerage network at the time of PCR.

³² The proposed location was within 10-kilometer radius of an Indian Air Force establishment. The solid waste landfill site was later dropped.

³³ Grievances were received but these were generally on issues like water line damages, road restoration, and excess and/or accumulation of soil molds. These were resolved by the IPIUs in a congenial, transparent, and impartial manner, as and when received. However, grievances like demand for water or sewerage connection and/or line are resolved as per the scope of work through proper approval from RUIDP (Rajasthan Urban Sector Development Investment Program –Tranches 1, 2, and 3: Social Monitoring Reports).

19. ADB approved four short resettlement plans.³⁴ Those for the wastewater subproject in Alwar and water supply subproject in Jhalawar were effectively implemented in compliance with ADB's Involuntary Resettlement Policy (1995) and government policy.³⁵ The external monitoring report confirmed that the income status of the 35 affected households was not adversely affected post implementation.

20. Overall, while there is progress in achieving project 1's objectives, there is also a shortfall in achieving the outcomes, particularly household connections for sewerage, SWM, and institutional development of the ULBs. Outcomes must be sufficiently available to the intended beneficiaries, which is not the case for the wastewater and SWM assets of the project. While substantial works and other outputs were completed, they were not sufficient to deliver the expected outcomes. For these reasons, this validation assesses the project less than effective on the borderline.³⁶

C. Efficiency of Resource Use

21. The PCR rated the project efficient. The economic internal rates of return (EIRRs) for water supply and wastewater components of the three ULBs were recomputed at project completion using the same approach as at appraisal.³⁷ In Jaisalmer, urban drainage components were linked with the wastewater component since benefits were interdependent. The EIRR at completion for the water supply component, which comprised about half of the project cost, was computed to be 37.8% (against 28.0% at appraisal) in Alwar, 20.3% (against 16.5%) in Jaisalmer, and 22.3% (against 19.50%) in Jhalawar. The higher EIRR completion figures were due to the significant increase in beneficiaries' welfare mainly from the inclusion of health benefits during reevaluation. For the wastewater management and drainage component, EIRRs at completion were computed to be 25.0% in Alwar and 13.9% in Jaisalmer, but these were lower than the 25.4% and 129.7%, respectively, at appraisal. The lower EIRRs were due to lower benefits since connections to properties were not completed and flows to the sewage treatment plant were lower than expected. It is not clear how the benefits listed in the methodology could have been accrued given the low number of connections.³⁸ The EIRR for the urban transportation component was neither estimated at appraisal nor at completion. A two-lane road over-bridge of 0.85 kilometer in Alwar was constructed with clear positive benefits.³⁹ The EIRR was not computed for the SWM component as the packages are not operational.

³⁴ The short resettlement plans for water supply and wastewater subprojects in Jaisalmer were not required to be implemented as the water supply pipeline had already been laid by the PHED and a short stretch of sewer line was dropped from the scope; due diligence reports documenting avoidance of these impacts were prepared.

³⁵ Livelihood assistance and shifting assistance were paid to 10 affected persons of the Alwar wastewater subproject. Two affected persons of Jhalawar water supply subprojects were paid livelihood assistance. All affected persons have returned to their original locations. None of the affected persons were vulnerable.

³⁶ Management argues that the project should be rated effective.

³⁷ For calculating population growth, the compounded annual growth rate of the population between 2001 and 2011 was used for projecting the population until 2025. For economic analysis, the financial cost was converted into economic costs by applying prescribed conversion rates, adjusting for contingencies, taxes, and duties, but excluding the financing costs (interest during construction and commitment charges). The local costs incurred until 30 July 2015 were converted to US dollars at the exchange rate on the date of disbursement, and local costs incurred between 31 July 2015 and 31 December 2016 were converted at an average exchange rate of Rs65 = \$1.

³⁸ Footnote 7, Appendix 9.

³⁹ The construction of an 0.85-kilometer two-lane rail over bridge in Alwar benefited all road users, including the poor, with time and cost savings, evidenced from focus group discussions with road users and communities by the project completion review mission. The rail over the bridge eliminated vehicle idling time, increased mobility, reduced average travel cost and traffic congestion, and reduced accidents at the railway-level crossing, as reported.

22. Loan extensions were approved to accommodate two additional sewerage subprojects in 2013—to utilize savings resulting from local currency depreciation and to complete contracts delayed because of contractors' poor performance. With adequate justification for the loan extensions and the EIRRs turning out to be greater than the 12% economic opportunity cost of capital, and despite the project delays, this validation agrees with the rating of efficient.

D. Preliminary Assessment of Sustainability

23. The PCR rates the project likely sustainable. The financial internal rate of return (FIRR) at completion for water supply ULBs was 2.9% (the appraisal figure was not available). The FIRR at appraisal for Alwar was 8.0% then –2.6% at completion, 2.9% (appraisal) and 14.5% (completion) for Jaisalmer, and 16.1% (appraisal) and –0.8% (completion) for Jhalawar. The weighted average cost of capital for project 1 is computed as 1.63% in real terms considering the actual financing plan against 3.0% at appraisal. At completion, the budgets and financial statements revealed that the three ULBs remain dependent on allocated revenues and grants from the state government to meet their capital expenditure. It was also noted that they were not fully harnessing the potential of raising revenue from available tax sources or user fees. Based on the state government's agreement to a 10.0% annual increases in the water tariff, the water supply interventions are likely sustainable with recovery of O&M costs under the proposed tariff after 3–5 years of operations.⁴⁰ The financial sustainability of the Public Health Engineering Department (PHED) is adequate to meet the O&M costs of water supply assets from the revenue generated due to water tariff revision, subject to PHED maintaining collection efficiency. Caution is warranted, however, as two of the three ULBs reported negative FIRRs for water supply.

24. The external monitoring report confirmed that the income status of affected persons was not adversely affected after implementation. Indigenous peoples were not affected. Regular public consultations were carried out to disseminate project benefits, identify issues, and address problems encountered by the public during construction. However, no evidence was provided to show that these activities led to a sense of ownership of project investments with benefits for sustainability. Similarly, no evidence was provided of the project's effects on natural resource management, pollution, biodiversity and greenhouse gas emissions. Improvements in sewerage, SWM, urban drainage, and urban roads and transport will have improved the urban environment in some respects but more evidence on this environmental impact is needed.

25. O&M of environmental sanitation assets (wastewater and SWM) is currently a concern.⁴¹ The financial sustainability of the ULBs at present collection levels is insufficient to meet the O&M costs of environmental sanitation assets, exacerbated by the lower-than-expected household connections, which reduced revenues. The environmental sanitation interventions can become financially sustainable only if (i) sewerage charges collected by PHED are transferred to the ULBs; (ii) solid waste collection charges are levied; (iii) public–private partnership arrangements initiated in the SWM sector are operationalized; and (iv) collection efficiency of the urban development tax is improved, or property taxes are reintroduced to meet O&M costs. The state government needs

⁴⁰ Based on available information, a water account was created for the PCR to calculate operating ratio (cash operating costs/cash operating revenues) computed in nominal terms for the three PHED divisions for the next 15 years. The operating ratio of the water account of the three ULBs are as follows: Alwar: Ratio of 1.61 in 2008–2009 reaches below 1.0 in 2012–2013; Jaisalmer: Ratio remains below 1.0 throughout the period of analysis; and Jhalawar: Ratio reaches below 1.0 during 2015–2016. An operating ratio below 1.0 indicates recovery of O&M costs with revised tariff after 3–5 years of operations. See Government of Rajasthan. 2015. Notification No. F/FA&CAO/RWSSMB/Mission/2014-15, 5 Nov 2015. Jaipur.

⁴¹ For example, there was inadequate maintenance of sewage treatment plants at Alwar and Jaisalmer due to nonpayment of O&M fees to contractors.

to establish adequate O&M systems and assign dedicated technical staff in the ULBs to enhance fiscal and financial sustainability. Based on the foregoing, the wastewater and SWM components are less than likely sustainable and when combined with the poor financial sustainability of the ULBs, this validation rates the project less than likely sustainable.⁴²

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

26. The PCR rated the development impact of the project satisfactory. The achieved impact targets included the following: *First*, the per capita net district domestic product increased by 111% for Alwar, 81% for Jaisalmer, and 50% for Jhalawar during 2007–2008,⁴³ and 2011–2012⁴⁴ indicating that target achievement is likely,⁴⁵ although the extent of the project's contribution and that of external factors is unknown. *Second*, the PCR suggested a substantial increase in the population with improved access to urban infrastructure and municipal services in the ULBs, with 17.5% more people provided with improved water supply, 24.7% of the total population (previously unserved) were reported to benefit from sewerage systems in Alwar and Jaisalmer (although these benefits are not yet fully accrued due to the low number of household sewerage connections), and 100% of the population of Alwar benefiting from improved urban transport infrastructure.⁴⁶ *Third* tourism increased beyond expectations by 15% in Alwar, 14% in Jaisalmer, 39% in Jhalawar, and 17% in Jhalarapatan between 2008 and 2016. *Fourth*, the percentage of population living below the poverty line declined in Alwar by 0.6%, in Jaisalmer by 1.0%, and in Jhalawar–Jhalapatan by 2.6%. Some 11.6% more of the population living below the poverty line in these ULBs gained access to improved urban infrastructure services.⁴⁷ *Fifth*, fewer incidence of waterborne diseases was reported by 16% households in the ULBs during 2016–2017 than those in 2008, although it is difficult to attribute this to the project.⁴⁸

27. The water supply component benefited the residents in terms of health, time, cost savings through a more reliable, safe, and regular water supply. Water security concerns were addressed in the desert town of Jaisalmer by constructing raw water storage facilities for a 15-day reserve, and reducing the time to access potable water from over 2 hours to less than 15 minutes.⁴⁹ The PCR reported that the drainage component in Jaisalmer minimized losses to households, mainly

⁴² Management argues that the project should be rated likely sustainable. Management also notes that any concerns are transitional and should not be the basis for rating.

⁴³ Government of Rajasthan, Department of Planning, Directorate of Economics and Statistics. 2012 *Estimates of District Domestic Product of Rajasthan, 2004–2005 to 2011–2012*. Jaipur.

⁴⁴ Per capita real income data is not available at the ULB level and, hence, district-wide per capita real income data for Rajasthan (available only until 2011–2012) was used. See Government of Rajasthan, Department of Planning, Directorate of Economics and Statistics. *Estimates of District Domestic Product of Rajasthan, 2004–2005 to 2011–2012*. Jaipur. This is corroborated by the 206% increase in the per capita real income at state level during 2007–2008 and 2015–2016. See Government of Rajasthan, Department of Planning, Directorate of Economics and Statistics. *Economic Review, 2015–2016*. Jaipur.

⁴⁵ The target was a 10% increase in per capita real income in project 1 ULBs by 2014. No baselines were provided in the overall DMF or in project 1 DMF. The government's PCR noted that per capita income of Rajasthan at constant prices (2004–2005) prices during 2014–2015 was ₹33,186 as compared ₹31,836 during 2013–2014, registering an increase of 4.24% in a year. If sustained for the project period, this would achieve the target. Data for the project period, including the base year, was not provided.

⁴⁶ Percentages are reported for towns where specific components were taken up.

⁴⁷ Footnote 7, Appendix 1.

⁴⁸ Investment Program Performance and Monitoring System Consultants. 2017. End-Term Evaluation Report for Tranche I Cities. Jaipur.

⁴⁹ Footnote 7. The PCR does not provide a source for this.

the poor living in low-lying areas, by reducing the incidences and duration of water logging. The urban transport component improved connectivity and livelihood opportunities.

28. The IPMU staff learned on the job through the implementation of RUIDP, particularly in the planning and preparing the feasibility documents of subprojects, procurement, contract management, safeguards, and monitoring. The IPMU became the leading organization of the state in managing large-scale, foreign-assisted, and government-funded projects. However, the overall capacities of ULBs remained weak because of a lack of qualified staff and inadequate revenues. Subsequent ADB loans to the state were developed as a combination of policy-based lending (3182-IND) and a project loan (3183-IND). These provided greater flexibility to the IPMU in identifying infrastructure gaps and capacity-building needs, in developing and designing subprojects, and in undertaking sustainable urban sector reforms at the state level.⁵⁰ In compliance with one of the reforms under the policy-based lending, the IPMU is now a part of the state-level nodal agency for implementing urban infrastructure projects.⁵¹ While all the impacts listed above are positive improvements for the project towns, given the shortcomings in the project's outcome and output achievements, particularly on environmental sanitation, it is not clear that the project's expected development impacts will fully accrue. Thus, a preliminary rating of less than satisfactory is established by this validation.⁵²

B. Performance of the Borrower and Executing Agency

29. The PCR rated the performance of the borrower and the executing agency satisfactory. The borrower, represented by the Government of India's Department of Economic Affairs, provided timely guidance and decisions to the Government of Rajasthan on the project. They undertook regular tripartite review meetings with ADB, the state government, and the IPMU, which helped to ensure good project preparation, loan effectiveness, compliance with loan covenants, effective and efficient project implementation, and project sustainability. The PCR indicated that the state government provided strong support to the IPMU, including timely counterpart funding and adequate human resources throughout the project period. The PCR also noted that the IPMU established implementation procedures for planning and implementation early in the project cycle. Effective monitoring and implementing mechanisms were established by the IPIUs in each project ULB. This validation concurs with the rating of satisfactory.

C. Performance of the Asian Development Bank and Cofinanciers

30. The performance of ADB is rated satisfactory in the PCR. ADB contributed significantly to preparing the project through the bridging TA. However, the omission of a project-specific DMF and the design defects should have been picked up earlier by the ADB. Nevertheless, ADB undertook regular review missions, a disbursement review mission, and prepared a midterm review. ADB acted decisively when changes of scope were required. The IPMU found ADB's support and advice effective in resolving project management issues.⁵³ ADB also provided training and supported exposure visits of IPMU and IPIU personnel to other ADB-funded projects

⁵⁰ ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Loans and Technical Assistance Grant and Administration of Grant to India for Rajasthan Urban Sector Development Program*. Manila.

⁵¹ The state government has set up the Rajasthan Urban Drinking Water, Sewerage, and Infrastructure Corporation, merging the IPMU, the Rajasthan Awas Vikas Nigam, and the Rajasthan Urban Infrastructure Finance and Development Corporation. The corporation's human resource development policy and organizational structure has been finalized.

⁵² Management argues that the development impact of the project should be rated satisfactory.

⁵³ For example, the May 2010 back-to-office report noted that ADB intervention overcame a long-standing problem of design approval that delayed progress by 8 months. It was reported that following the intervention, the problem was resolved in 3 days.

in India. ADB monitoring ensured adherence to due processes and transparency in procurement, disbursements, and safeguards while upholding integrity and ethical standards.⁵⁴ This validation agrees with the rating of satisfactory.

D. Others

31. The state government's assessment of the project noted that the physical infrastructure provision was more successful than the capacity building and policy reform, but overall the project was rated successful.⁵⁵ The state government recommended fielding of follow-up missions for at least the first year after completion to help sustain the project. It also recommended that ADB could consider providing an advisory TA to provide technical and managerial expertise in the O&M of assets, especially water supply, sewerage, and SWM.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

32. The project is rated less than successful since it was relevant, less than effective, efficient, and less than likely sustainable.⁵⁶ ADB was the first multilateral development bank to tackle urban services in Rajasthan, where the need for these basic urban services is immense. While significant progress was made to improve urban services to the project towns, there were shortfalls in the expected outcomes. The project was relevant to the government's overall development objectives and to ADB policies, notwithstanding acknowledged design flaws; and it was efficient in achieving its outcomes and outputs since the recomputed EIRRs for all interventions, except SWM, were above the 12% economic opportunity cost of capital. It was less than effective because of shortfalls in the achievement of outcomes on household connections for sewerage, SWM, and the institutional development of the ULBs. It was rated less than likely sustainable because of the lack of financial resources for the O&M of the environmental sanitation assets and the poor financial sustainability of the ULBs.

Overall Ratings

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Relevance	Relevant	Relevant	
Effectiveness	Effective	Less than effective	There was a shortfall in the achievement of expected outcomes, particularly on household connections for sewerage, solid waste management, and the institutional development of the ULBs.
Efficiency	Efficient	Efficient	
Sustainability	Likely sustainable	Less than likely sustainable	The financial sustainability of the ULBs at present collection levels is insufficient to meet the O&M costs of environmental sanitation assets.

⁵⁴ For example, the ADB provided a mission in September 2012 to undertake a Statement of Expenditure Review and a Financial Management Assessment, which led to recommendations to strengthen overall project implementation. See September 2012 back-to-office report.

⁵⁵ The state government's PCR that was reviewed is untitled and undated.

⁵⁶ Management argues that the project should be rated effective, likely sustainable, and therefore successful overall.

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
			At completion, the budgets and financial statements of the project 1 ULBs showed that these remain dependent on allotted revenues and grants from the state government to meet capital expenditure, and they are not fully harnessing the potential of raising revenue from available tax sources or user fees.
Overall assessment	Successful	Less than successful	
Preliminary assessment of impact	Satisfactory	Less than satisfactory	Expected impacts are unclear due to shortfalls in the achievement of outcomes in the environmental sanitation components and institutional capacity development.
Borrower and executing agency	Satisfactory	Satisfactory	
Performance of ADB	Satisfactory	Satisfactory	
Quality of PCR		Satisfactory	

ADB = Asian Development Bank, IED = Independent Evaluation Department, O&M = operation and maintenance, PCR = project completion report, ULB = urban local body.

Source: ADB (IED).

B. Lessons

33. In addition to the lessons learned presented in the PCR, this validation suggests adding the following:

34. **Country-level lessons.** Inclusive urbanization is a component of the government's new planning process and the ADB's Country Partnership Strategy.⁵⁷ The urban sector program of ADB will contribute to inclusive growth by supporting investments in municipal infrastructure—water supply, sanitation, SWM, urban transport and traffic management, tourism infrastructure, and urban health services. RUS DIP experience is highly relevant and arrangements could be made to ensure that lessons learned are applied to ongoing and future urban programs.

35. **Sector-level lessons.** The RUS DIP could have been more innovative in the application of new technologies for urban services. For example, uninterrupted pressurized water supply; smart metering; and measures to reduce nonrevenue water, fecal sludge management, wastewater reuse and recycling, and waste-to-energy initiatives could have been employed. In addition, as the PCR noted, continuous water supply should be the norm for water supply interventions. The RUS DIP could be used as a test bed for innovations so long as local capacities permit.

36. Urban projects with sewerage components should be designed to include household connections. If not, sewage treatment plants will be underutilized and revenue streams less than expected and impacting on sustainability. If provision of sewage plants is part of the project, the capacity to provide connections must be ensured.

37. Urban projects with SWM components should be designed in a more holistic manner so that the full cycle of waste collection, segregation, composting, recycling, and disposal is

⁵⁷ ADB. 2017b. *Country Partnership Strategy: India, 2018–2022—Accelerating Inclusive Economic Transformation*. Manila.

incorporated. Stand-alone interventions, such as the landfill sites constructed in the project, are unlikely to fully solve the waste management problem.

38. Untied transfers (based on the recommendations of the 14th Central Finance Commission,⁵⁸ and State Finance Commission)⁵⁹ would assist the ULBs to meet the O&M costs of sewerage and SWM assets, and sewerage assets will have the potential to generate additional revenue once the revised tariffs are levied. ULBs could also bring more properties under the urban development tax. The lesson is that commitment is needed to a clear financing strategy—that leads to self-sufficiency.

39. **Project-level lessons.** The RRP included a strategy to maximize beneficial impacts on women. Although the RRP notes that the investment program covered these issues in the design of its subprojects, there is no evidence of this in the DMF indicators and targets or in a gender action plan. In a context where gender equality is an issue, and where government prioritizes the equal participation of women, more emphasis is required in projects such as RUSDIP.

40. No assessment was made of the project's effects on natural resource management, pollution, biodiversity, or greenhouse gas emissions and these should be reflected in the DMF at impact level.

41. **Results framework and methodology-level lessons.** Individual DMFs must be prepared for each MFF project to enable the comprehensive assessment of project achievements. DMF indicators at outcome and output levels must directly correlate to project interventions, based on available data, and be concise to facilitate monitoring and evaluation, without being time-consuming. The DMF at appraisal was too complex and should have had less, but more general outputs and performance indicators.

C. Recommendations for Follow-Up

42. To ensure that lessons learned are applied to ongoing and future urban transformation programs, it is recommended that ADB, in association with the government, design and carry out a long-term RUSDIP socioeconomic monitoring program by conducting regular surveys and analyses to understand the annual changes brought about by the investment program. A set of measurable socioeconomic indicators should be used to analyze the impacts, and the results used to improve the design of future ADB projects and programs and enhance the socioeconomic benefits of inclusive urban projects and programs in the 2018–2022 Country Partnership Strategy.

43. Follow up is required to ascertain the reasons for the low level of household sewer connections in the project towns. Unless these issues are resolved, and the household connections increased, the full benefits of the improvements to the sewer system will not materialize. Similarly, the institutional capacity of the ULBs should be followed up to establish their ability to manage the built assets (water supply and sewerage) and whether they are sufficiently raising revenue from available tax sources or user fees.

⁵⁸ Government of India, Ministry of Finance. 2015. Guidelines for Release and Utilization of Grant Recommended by the Fourteenth Finance Commission for Rural and Urban Local Bodies. Delhi.
<http://www.panchayat.gov.in/documents/10198/349332/Guidelines.pdf>

⁵⁹ State of Rajasthan, State Finance Commission. 2015. Interim Report of the Fifth State Finance Commission of Rajasthan (for 2015–2016). Jaipur.
http://sfc.rajasthan.gov.in/includes/interim_report_eng.pdf

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

44. Performance monitoring and evaluation covenants were complied with. Investment program performance and management system consultants were mobilized in September 2008. The final report on the baseline socioeconomic survey was submitted in March 2012 but the final monitoring report was not available to the PCR nor for this validation.

45. A DMF should have been prepared for project 1 at the outset, and for the other tranches as and when appraised.⁶⁰ The DMFs for each tranche should have a theoretical linkage with the overall DMF, i.e., projects under individual tranches of MFF are monitored in the same way as stand-alone projects, with DMFs tracking inputs, activities, outputs, results, and outcomes. These should also show the details of the investment and the link between the tranches and the overall MFF.

B. Comments on Program Completion Report Quality

46. The PCR was clearly written, consistent with the appropriate guidelines, and provided adequate discussions on key features of the project, including safeguards, fiduciary issues, and loan covenants. The candidness on the design shortcomings under relevance is appreciated. This validation also recognizes the challenges faced to adjust the output and outcome indicators derived from the entire program's DMF, which at appraisal did not have a separate DMF for project 1. The evidences for effectiveness and sustainability were less clear and could have been better supported to justify the ratings. The methods of recomputation of EIRRs and FIRRs are generally sound, however, the wastewater EIRRs are questionable given the low number of household connections. Overall, this validation finds the quality of the PCR satisfactory.

C. Data Sources for Validation

47. This validation was based on reviews of the RRP, PCR, loan review mission reports, IED Project Safeguard Assessment, and the PCR prepared by the state government.

D. Recommendation for Independent Evaluation Department Follow-Up

48. A program performance evaluation report (PPER) should be prepared once all tranches are complete so that the MFF is evaluated in its entirety against the impact, outcomes, and outputs expected at appraisal. Particular attention should be given to the facility's effectiveness and sustainability.

⁶⁰ ADB. 2007b. *Guidelines for Preparing a Design and Monitoring Framework*. Manila. (Section III.G.6). The DMF for the MFF will be an appendix to the RRP, whereas the DMF for each tranche will be an annex of the periodic financing request.

APPENDIX 1: LINKED DOCUMENTS

Project Validation Report India: Rajasthan Urban Sector Development Investment Program
(Tranche 1)

1. SARD Comments on Final PVR

<https://www.adb.org/sites/default/files/linked-documents/SARD-Comments-L2366.pdf>

2. IED Clarifications to SARD Comments

<https://www.adb.org/sites/default/files/linked-documents/IED-Clarifications-to-SARD-Comments-L2366.pdf>