Validation Report
August 2019

India: Rural Roads Sector II Investment Program (Project 5 and Multitranche Financing Facility)

Reference Number: PVR-613
Program Number: 37066-013 and 37066-063
MFF Number: M0001
Loan Number: 2651

Independent Evaluation ADB

Raising development impact through evaluation

ABBREVIATIONS

ADB	–	Asian Development Bank
DMF	–	design and monitoring framework
EIRR	–	economic internal rate of return
IED	–	Independent Evaluation Department
km	–	kilometer
MFF	–	multitranche financing facility
PCR	–	project completion report
PFR	–	periodic financing request
PMGSY	–	Pradhan Mantri Gram Sadak Yojana (Prime Minister’s Rural Roads Program)

NOTE

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

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PROGRAM BASIC DATA

Project Numbers	37066-013 and 37066-063	**PCR Circulation Date**	14 August 2018	
Loan/Grant Numbers	2651	**PCR Validation Date**	Aug 2019	
Program Name	**Rural Roads Sector II Investment Program (Project 5 and Multitranche Financing Facility)**			
Sector and subsector	Transport	Road transport (non-urban)		
Strategic agenda	Inclusive economic growth			
Safeguard categories[a]	Environment		B	
	Involuntary resettlement		C	
	Indigenous peoples		C	
Country	India		**Approved** ($ million)	**Actual** ($ million)
ADB Financing ($ million)	**ADF:** 0.00	**Total Project Costs**	1,048.78	987.85
	OCR: 750.00[b]	**Loan/Grant**		
		Tranche 1	180.00	173.91
		Tranche 2	77.65	38.09
		Tranche 3	130.00	121.73
		Tranche 4	185.00	185.00
		L2651	222.20	192.26
		Borrower		
		Tranche 1	70.20	59.50
		Tranche 2	22.81	27.38
		Tranche 3	38.80	56.59
		Tranche 4	54.80	63.35
		L2651	67.32	70.04
Approval Date		**Effectiveness Date**		
MFF001	20 Dec 2005	MFF001	27 Nov 2006	18 Oct 2006
L2651	6 Jul 2010	L2651	31 Oct 2010	29 Oct 2010
Signing Date		**Closing Date**		
MFF001	25 Nov 2005	MFF001	30 Jun 2013	1 Jan 2015
L2651	2 Aug 2010	L2651	30 Jun 2013	1 Jan 2015
Project Officers		**Location**	**From**	**To**
	O. Tonkonojenkov	ADB headquarters	Jul 2010	Oct 2012
	L. Tai	ADB headquarters	Oct 2012	Apr 2014
	A. Srivastava	India Resident Mission	Apr 2014	Jul 2018
IED Review				
Director	N. Subramaniam, Sector and Project Division (IESP), IED			
Team Leader	M. Legal, Senior Evaluation Officer, IESP[c]			

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

[a] The safeguard categories presented are that of Project 5. The multitranche financing facility (MFF) is categorized as B on environment, involuntary resettlement, and indigenous peoples.

[b] The approved amount for the MFF is $750.0 million, while the approved amount for Project 5 is $222.2 million.

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I. PROGRAM DESCRIPTION

A. Rationale

1. Underinvestment in India's roads and rapid growth led to congestion, road deterioration, and high costs of transport.[1] In 2000, 70% of India's population lived in rural areas. About 850,000 habitations (40%) were without all-weather road connectivity.[2] Many villages relied on earth tracks that were unsuitable for motorized traffic and became impassable during the rainy season. Even where all-weather connections were provided, rural roads were of poor condition and many needed rehabilitation.

2. In 2000, the Government of India established the Prime Minister's Rural Roads Program, also known as the Pradhan Mantri Gram Sadak Yojana (PMGSY), to address the issue of inadequate road connectivity. It aimed to provide good all-weather road connections to all habitations with a population of 1,000 or more by 2003, and to all habitations with a population of 500 or more by 2007. This program was expected to connect more than 170,000 eligible habitations through the construction and upgrading of about 738,000 kilometers (km) of rural roads to an all-weather standard at a total estimated cost of about $30 billion.[3]

3. In 2005, the country strategy and program of the Asian Development Bank (ADB) for India aimed to mainstream poverty reduction using infrastructure by generating higher incomes and employment, and improving access to social services.[4] The country strategy and program update for 2005–2007 focused on strong connectivity to link poor rural families to social services and markets.[5] It also identified the need to incorporate institutional reforms in infrastructure projects to improve sustainability, particularly through more effective maintenance.

4. To implement the PMGSY, the government requested ADB for a multitranche financing facility (MFF) of $750 million over a 5-year period to assist in the upgrading or construction of 30,000 km rural roads in the states of Assam, Orissa,[6] and West Bengal. It aimed to build capacity in implementing rural road development and address policy issues (i.e., safeguards and road safety) throughout the investment cycle. The expected total cost of the program was $2.1 billion, of which 64% was to come from the government. The modality was considered appropriate with a long-term, well-defined program for multiple state agencies in view of its predictable and flexible financing arrangement. The subject of this validation is the progress under the MFF and its fifth tranche (Project 5), as described in the project completion report (PCR).[7]

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[1] ADB. 2005. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to India for the Rural Roads Sector II Investment Program*. Manila.

[2] A habitation is a distinct population cluster with houses that occupy an area and has a local name. In rural areas, a village may include one or more habitations.

[3] ADB. 2016. *Completion Report: Rural Roads Sector II Investment Program (Project 3) in India*. Manila.

[4] ADB. 2003. *Country Strategy and Program (2004–2006): India*. Manila.

[5] ADB. 2004. *Country Strategy and Program Update (2005–2007): India*. Manila.

[6] The Government of India changed the name of the state of Orissa to Odisha on 1 November 2011. The original name (Orissa) is used throughout this report to be consistent with the report and recommendation of the President.

[7] ADB. 2018. *Completion Report: Rural Roads Sector II Investment Program (Project 5 and Multitranche Financing Facility) in India*. Manila.

B. Expected Impacts, Outcomes, and Outputs

5. Based on its design and monitoring framework (DMF), the investment program was expected to contribute to poverty and deprivation reduction and support economic growth in communities connected by the program's roads. The outcome envisaged was improved connectivity of rural community to markets, district headquarters, and other centers of economic activity via program roads (footnote 1). It indicated two outputs. The first output was the construction and upgrading of 30,000 km of priority rural roads to all-weather rural roads by 2010 to connect about 19,000 rural habitations. The second output of the investment program was improved community participation. These roads were to be collectively rated 30% higher than the current conditions, and rural roads improved under earlier completed loans of the program were to maintain a pavement condition index value of 5.[8]

6. The original coverage of 30,000 km was revised to 13,198 km in the PCR for Project 1.[9] This was prepared in 2012 to reflect a more conservative MFF coverage and design issues. While this statement was validated in 2014, DMFs of the succeeding tranches, including the PCR for Project 5 and the MFF, still reported the original 30,000 km target. It was only in the periodic financing request for Project 5 that the revised target of 14,000 km was reported. This validation will refer to the revised target. Project 5 aimed to finance the construction and upgrading of 312.5 km rural roads in Chhattisgarh, 2,443.6 km in Madhya Pradesh, 1,509.9 km in Orissa, and 443.5 km in West Bengal, for a total of 4,709.4 km.[10]

C. Provision of Inputs

7. The MFF was approved in December 2005 with an expected availability period of until March 2009. This was extended to March 2010, which was the revised closing date for the government to submit the periodic financing requests (PFRs) to ADB. As per the loan agreement, the closing date was in June 2013 and the actual closing date was in January 2015 due to implementation delays caused by an unusually long and intense rainy season, unavailability of materials in some states, slow bridge construction, rebidding of some contract packages, and state elections. The weak capacity of local contractors was also a major obstacle. Project 5 was approved in July 2010 with an expected effectiveness in October 2010. The actual date of effectiveness was 2 days early. Project 5 was completed in December 2013. The loan closing for Project 5 was delayed from June 2013 to January 2015 due to a rebidding of contracts in Chhattisgarh that resulted in late procurement, which only began in 2012.

8. During the preparation of individual projects, the cost estimate was revised to $1.0 billion, about half of the estimated amount of $2.1 billion (para. 4). The actual cost was $987.85 million due to lower contract bids, exclusion of some subprojects from the project scope, and lower financial charges paid on ADB loans. Since ADB financing was kept the same as the original, the cost sharing was reversed with 75.8% ADB financing and 24.2% from the government. The government requested a few loan cancellations due to (i) lower contract bids and the appreciation of the United States dollar, (ii) removal of subprojects due to nonresponsive bids; and (iii) reduction of scope as some projects were transferred to other government agencies.

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[8] This index, as defined in the PMGSY Operations Manual, rates the condition of the surface of the road and helps identify maintenance and rehabilitation needs. Based on the PMGSY website, a value of 5 means very good surface condition Government of India, National Rural Roads Development Agency. Pradhan Mantri Gram Sadak Yojana. Methodology for Determining the Pavement Condition Index. http://pmgsy.nic.in/op14g.htm.

[9] ADB. 2012. *Completion Report: Multitranche Financing Facility for India Rural Roads Sector II Investment Program (Project I)*. Manila.

[10] ADB. 2010. *Periodic Financing Request Report: Rural Roads Sector II Investment Program Tranche 5*. Manila.

The cancellations were approved. At completion, $710.99 million or 94.8% of the funding under the MFF was utilized.

9. The total cost estimated for Project 5 was at $289.52 million. It was about 9.4% lower at completion because of lower contract bids and exclusion of some subprojects. The financial charges for the ADB loan fell from $11 million to $2.78 million, as the interest rate was lower than expected. At appraisal, Project 5 was to be financed by an ADB loan of $222.2 million. Only $192.26 million was utilized, which was 73.3% of the project cost.

10. Technical support consultants were funded under the ADB loans and managed at the central level to conduct safeguards due diligence and impact monitoring, prepare project progress reports, and provide other services for all projects under the program. Each project state engaged project implementation consultants financed by the government. The PCR did not provide data on person-months of actual consulting services. Project 5 was categorized B for safeguards for the environment, C for involuntary resettlement, and C for indigenous peoples. An initial environmental examination rated the physical interventions of the program as minor. None of the sample subprojects involved road realignments and the establishment of new road alignments. The environmental impacts were expected to occur during construction and were to be temporary and thus, reversible. There was no resettlement or impact on indigenous peoples. There was no technical assistance associated with Project 5.

D. Implementation Arrangements

11. As envisaged at appraisal, the executing agencies for the program and all its tranches were the Ministry of Rural Development at the central level and the state governments at the state level. During implementation, a coordination committee, chaired by the ministry's joint secretary with representatives from relevant agencies, met on a regular basis to monitor the use of the loan and overall implementation performance. At the state level, a standing committee, involving the senior officials of the project, finance, forest, and revenue departments, coordinated the implementation of the program.

12. The state rural roads development agencies were responsible for implementing the projects. The subprojects in each state were implemented through district-level project implementation units led by a superintending engineer and supported by assistants or junior engineers, and administrative staff. The project implementation units prepared detailed project reports for the subprojects and implemented the community participation framework, the environmental assessment and review framework, and provisions of the environmental code of practice. After project completion, the project implementation units managed road maintenance, including road condition inspections, procurement of contractors, financial management, and local government coordination. All 34 loan covenants related to the framework financing agreement were complied with.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

13. The PCR rated the MFF and Project 5 at appraisal and completion relevant, taking into account the objective of improving connectivity in rural areas through development of rural access roads. The MFF built and upgraded all-weather rural roads based on specific criteria and were designed in accordance with the program guidelines. Technical and safeguards requirements were incorporated in the project design reports prepared for each subproject and due diligence

activities were carried out to ensure that these requirements were met. The PCR indicated that as part of the program, the MFF and Project 5 were relevant to the Tenth Five-Year Plan 2002–2007, Eleventh Five-Year Plan 2007–2012, and Twelfth Five-Year Plan 2012–2017 of the government.[11] The country partnership strategies during the period were designed to support the efforts of the government to address constraints identified in its development plans, and facilitate inclusive growth (para. 3).[12]

14. The use of the MFF modality in the development of the rural roads sector facilitated continuous improvements in preparation of each tranche and provided flexibility to the government in deciding the amount of financing for each project. It also allowed the use of savings from earlier projects, thus maximizing the utilization of MFF funding while reducing commitment charges paid by the government. The MFF identified challenges and opportunities and incorporated lessons learned in the design stage for each individual project. This validation assesses the MFF as relevant, both in supporting the government and ADB's strategy, although the evolving targets could have been properly documented so that achievements based on the revised targets would be properly monitored. For Project 5, which remained consistent with the overall investment program, this validation's assessment is relevant. However, this validation notes the shortcoming of its DMF that reflected the outcome targets of the MFF. Since Project 5 is only a subset of the MFF, its DMF could have reflected its own outcome and output targets.[13] Given that this is the first MFF loan of ADB since it was introduced in 2005, this validation views that lapses in its design were to be expected. However, this validation notes that there were recurring issues and lessons identified in the earlier tranches that were left unresolved or were still identified in Project 5.[14] Since the tranches under this MFF were simultaneously implemented, some lessons identified in each tranche at completion failed to feed into the implementation of the succeeding tranches.

B. Effectiveness in Achieving Outcomes and Outputs

15. The PCR rated the MFF and Project 5 as effective. This validation notes that two out of the three MFF target outcomes were achieved, including the access to markets, health, and education facilities disrupted on zero days per year and the intended number of rural habitations connected by the rural road network was reached. According to the PCR, the target of 16,376 rural habitations connected was only partly achieved.[15] Since targets under an MFF are evolving as the tranches progress (i.e., depending on the readiness of the subprojects and the additional states in each of the tranche), the PCR could have gathered the revised targets from each tranche to better assess this indicator. Culling out the data from various PFRs, progress and validation reports, the validated total target was 5,636 rural habitations connected by the rural road network and the validated actual rural habitations connected were 5,654. While the PCR

[11] Government of India, Planning Commission. 2003. *Tenth Five-Year Plan, 2002–2007*. Delhi; Government of India, Planning Commission. 2008. *Eleventh Five-Year Plan, 2007–2012*. Delhi; and Government of India, Planning Commission. 2012. *Twelfth Five-Year Plan 2012–2017*. Delhi.

[12] ADB. 2009. *Country Partnership Strategy: India, 2009–2012 Abridged Version*. Manila.

[13] The facility's outcome targets are the combined outcome targets of all the tranches, likewise for its output targets.

[14] The lessons identified in Project 1 were the same lessons identified in Project 2 (i.e., required time to complete subprojects, project readiness, and utility relocation) and in Project 3 (i.e., availability and capacity of contractors). The lesson on the need to conduct a socioeconomic survey to monitor the program's social impact and the need to increase institutional capacity to meet the increasing demand for road maintenance were identified in Project 2 but were either unresolved or still identified as a lesson in Project 5.

[15] The expected targets were 4,692 for Assam, 2,151 for Orissa, and 9,533 for West Bengal.

claimed that the percentage of habitants employed outside of villages increased substantially, there was no quantitative data to support this.[16]

16. Two out of the four output indicators were generally achieved, with two indicators not amenable for validation. According to the PCR, the target of 30,000 km priority rural roads was only partly achieved. Again, since targets under the MFF are evolving, the PCR could have assessed this indicator based on the aggregate targets defined in each tranche. Using the targets reported in the PFRs and validation reports, the validated total target was 13,826 km of all-weather rural roads and the validated actual all-weather rural roads constructed or upgraded were 13,100 km, which is 95% of the target. The road surface roughness was within the international roughness index of 4–6, compared to the target pavement condition index value of 5. The two output indicators that cannot be validated include (i) the constructed or upgraded roads that were of good quality; and (ii) improved community participation since there were no complaints and grievance redress mechanisms in place and consultations were conducted according to the consultation participation framework. For item (i), the PCR did not indicate whether the quality was 30% higher as specified in the DMF. For item (ii), improved community participation was supposed to be measured by the satisfaction of the affected communities. Neither the "no complaints" scenario or the mechanisms in place can validate whether community participation indeed improved. Although the MFF was not able to deliver all its envisaged outputs, on the whole, it was able to construct rural roads with improved road surface roughness leading to improved access to markets and basic social services benefiting the intended project beneficiaries. For these reasons, this validation assesses the MFF as effective.

17. For Project 5, two out of the three outcome indicators were achieved, with one indicator not amenable for validation. Other than the improved all-year round access to markets, the number of habitation was achieved with a total of 1,573 rural habitations compared to the target of 1,183.[17] The same validation issue arose when Project 5 is being assessed against its target number of people obtaining work outside the village, and changes in cropping pattern and marketing of agricultural produce. In terms of output, the seven indicators were generally achieved, of which, five were all under the capacity building component. Under the capacity building component, Project 5 targeted to (i) conduct consultations according to the consultation participation framework, (ii) form grievance mechanisms, (iii) install information board containing project related data at the start of road construction, and (iv) resolve complaints (if any); and or (v) no complaints were achieved. The indicator to maintain pavement condition index value of 4 was also achieved. On the targeted rural road construction and upgrading of 4,700 km, 95% was completed. Although Project 5 slightly fell short in constructing the intended length of rural roads, altogether, it was able to construct rural roads with improved road surface roughness that reached the intended beneficiaries and improved their access to markets and basic social services. For these reasons, this validation assesses Project 5 as effective.

18. On addressing safeguard issues, the PCR reported that the initial environmental assessment had adequately examined the environmental issues. The state governments and project implementation units, with the technical support consultants, adequately implemented the environmental mitigation measures and the project implementation consultants monitored the

[16] The design and monitoring framework in the report and recommendation of the President also did not provide quantitative target levels.
[17] It was not clear whether the 1,573 were rural habitations with a population of more than 500. The indicator for Output 1 includes the target number of habitations connected by the roads under Project 5. The target outcome of Project 5 is the same as the MFF's. The validation uses its output 1 data to validate Project 5's outcome achievement relating to this indicator.

environment safeguards regularly. ADB missions noted that the environmental safeguards in the project states were generally adequate and no significant environmental impacts were reported.

C. Efficiency of Resource Use

19. The PCR rated the MFF and Project 5 as efficient. Economic internal rates of return (EIRR) compared the economic costs and benefits in the with- and without-project scenarios. It included vehicle operating cost savings and passenger-time cost savings as benefits. The recalculated EIRR was 19.8% for the whole investment program, higher than the 18% estimated at appraisal mainly due to higher actual traffic on project roads. The EIRR for Assam under Project 3 was 12.5%. This was lower than estimated because of the higher unit cost for civil works and a prolonged implementation period. The EIRRs for Orissa under Projects 4 and 5 were also lower than estimated at appraisal in view of higher unit investment cost. Nonetheless, all EIRRs for all states and all projects were above the threshold social discount rate of 12%. The EIRRs were subjected to a sensitivity analysis, the results of which showed that all the projects remained economically viable for all tested scenarios.

20. The recalculated EIRR for Project 5 was 19.2%, broken down into 24.8% for Chhattisgarh, 20% for Madhya Pradesh, 15.7% for Orissa, and 23.7% for West Bengal. These rates were higher than the calculations at appraisal except for Orissa. The lower EIRR for Orissa was caused by a higher unit cost and lower traffic volume.[18] Since the recalculated EIRRs were above the social discount rate of 12%, the project was considered economically viable. The EIRRs were subjected to a sensitivity analysis, the results of which showed that the project remained economically viable in all tested scenarios. The sensitivity test showed that the EIRR is most sensitive to changes in benefits. The PCR concluded that the government should focus more on the socioeconomic development in the project area and implement policies to stimulate transport services and increase incomes of the villagers.

21. This validation notes two main shortcomings in the methodology used for the EIRR calculations. The financial costs were adjusted by a standard conversion factor to arrive at the economic costs. This is incorrect because only non-tradables should be adjusted by the standard conversion factor assuming that the numeraire is border price. Since a substantial part of costs is tradable, such as machinery and materials, the costs are likely underestimated, which inflated the EIRR. The PCR was also not clear on how labor—a significant cost component—was shadow priced. There was also no indication on shadow pricing of project benefits. The PCR also ignored the economic benefits of induced traffic and provided no explanation for the exclusion. Better rural roads promote economic development and induce more traffic, which should have been valued in terms of consumers’ surplus. As a result, induced traffic was assumed to be normal traffic and valued in terms of vehicle operating cost savings. Notwithstanding the shortcomings in the methodology employed for the EIRR calculations, this validation assesses the MFF and Project 5 as efficient because of the substantial economic benefits from the project.

D. Preliminary Assessment of Sustainability

22. The PCR rated the MFF and Project 5 as likely sustainable. Following government guidelines, civil works contracts contained a provision requiring contractors to maintain the project roads for 5 years after construction completion. In 2010, the Ministry of Rural Development

[18] The project completion report mission in November 2016 observed that roads in Madhya Pradesh, West Bengal, and Orissa under Project 5 have low traffic. ADB (South Asia Department). 2016. Project Completion Report Review Mission: Loan 2651-IND: Rural Road Sector II Investment Program. Back-to-office report. 25 November (internal).

introduced a mechanism to ensure that state governments provide timely and adequate funding for the maintenance of roads constructed under the program by requiring each state government to (i) compute annual requirements for maintenance funds, (ii) issue a certificate-cum-undertaking regarding the proper maintenance; and (iii) act upon maintenance issues. The PCR mission observed that the project roads were generally well-maintained and noted that funds and capacity for road maintenance were sufficient.[19]

23. Under the program, the emphasis is expected to shift from construction of roads to operation and maintenance of the road network. The government agreed that capacity enhancement of rural road agencies, training of engineers, implementation of an effective network management system and supply chain should be considered for sustainable rural road operations. Thus, project implementation units were expected to enhance inspections of road conditions and develop maintenance plans as well as take immediate actions to address road damage and encroachments. These initiatives were evident in the up-to-date online information database on the progress of all the civil works of the program.[20] Some vehicles exceeded the speed limit because of the improved road conditions. Increase in average vehicle speed led to safety issues, particularly in mixed traffic conditions involving pedestrians, non-motorized vehicles, and animal-driven carts on the project roads.[21] The government agreed to provide road furniture and safety measures in the current and future projects. This validation assesses the MFF and Project 5 as likely sustainable.

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

24. The PCR rated the development impacts of the MFF and Project 5 on poverty as satisfactory. However, the PCR was not able to measure the investment program's contribution to poverty reduction and whether it contributed to the reduction of poverty rates in rural areas by 5%. Instead, it used the data on the reduced number of uneducated inhabitants as a proxy indicator for education levels, which the validation considers as weak. The 2016 ADB survey revealed that average income in the covered area increased by about 40% since the program.

25. The DMF envisaged 10% improvement in social indicators in areas served by the project roads, including for maternal and infant deaths, safe delivery, immunization, post-primary dropout, and primary school teacher attendance. Although data on health indicators was not provided, the PCR noted that access to health care for rural communities has substantially improved, and travel time to health care facilities decreased on average by 40 minutes and by as much as 120 minutes during the rainy season in some habitations. The number of clinic or hospital visits increased by 5% for those visiting at least once a month. The proportion of inhabitants completing grade 12 and higher increased by 4%. Those completing grades 5 to 10 increased by 5%, while the number of uneducated inhabitants decreased by 8%.[22]

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[19] The project completion report mission in November 2016 observed that roads constructed or upgraded in Project 5 were generally in good condition but the pavement was damaged, road shoulders were not adequately maintained, and there was no maintenance done on the grass on road shoulders. ADB (South Asia Department). 2016. Project Completion Report Review Mission: Loan 2651-IND: Rural Road Sector II Investment Program. Back-to-office report. 25 November (internal).

[20] Government of India, National Rural Roads Development Agency. Pradhan Mantri Gram Sadak Yojana. Online Management, Monitoring and Accounting System. http://omms.nic.in/Home/CitizenPage/.

[21] Other road shoulders under Project 5 were being used by villagers as drying areas.

[22] Footnote 7. Paragraph 44 (viii) had different figures for social indicators: (i) the inhabitants completing grades 10 to 12 and higher increased by 3%, (ii) the number completing grades 5 to 10 increased by 4%, and (iii) the number of uneducated inhabitants decreased by 6%. This validation uses those that were reflected in the PCR Appendix 1.

26. The 2016 ADB survey revealed that while the average distance traveled by local inhabitants to reach their workplaces increased by about 1 kilometer, the average travel time decreased by 0.75 hours. Rural populations now have better access to government schemes through information provided at government offices at the block and district levels. Daily public transport services increased by an average of 115% for buses and 200% for jeeps, vans, and three-wheeled vehicles in the project areas.

27. Also, for Project 5, education levels were used as proxy to measure reduced poverty. Project 5 employed about a million person-months, mostly from poor families in the project states.[23] Both men and women were paid equally based on their work and no instance of child labor was reported. Public transport services and related businesses were promoted, generating substantial work opportunities. Access to large and more distant markets increased incomes of farmers and contributed significantly to poverty reduction in the project areas.

28. In November 2016, the PCR mission conducted a local survey of the residents benefited by Project 5. The survey reported that the socioeconomic benefits of Project 5 were: (i) better access to medical facilities in the town hospital, (ii) better access to higher secondary schools, especially for girls, (iii) improved attendance rate of teachers, (iv) ability of villagers to grow vegetables and sell to the nearest town, (v) more frequent visits of government officials to the village; and (vi) increased land prices. Given all these findings, this validation assesses the development impact of the MFF and Project 5 as satisfactory.

B. Performance of the Borrower and Executing Agency

29. The PCR rated the performance of the borrower and the executing agencies as satisfactory. Sound organizational arrangements were established to ensure efficient and timely management of project implementation. The central government provided the required counterpart funds and support in a timely manner. To ensure successful project implementation, the executing agencies closely monitored construction progress and regularly coordinated quality control activities. This included setting up an online information database that provided up-to-date progress of the civil works, and an e-procurement system that promoted transparency, consistency, and efficiency in all the contracts under the program. The executing agencies, with assistance from the consultants, prepared the required periodic project progress reports and PCR. Chartered accountants audited the financial accounts and statements to ensure proper use of ADB loans. Capacity building programs significantly enhanced the capability of the executing and implementing agencies, and project implementation units. The executing and implementing agencies also facilitated ADB review missions for the MFF and Project 5. This validation assesses the performance of the borrower and the executing agencies as satisfactory for both the MFF and Project 5.

C. Performance of the Asian Development Bank and Cofinanciers

30. The PCR rated the overall performance of ADB for the MFF and Project 5 as satisfactory. The ADB headquarters administered the MFF and Project 5, then delegated it to the India Resident Mission in March 2014. During project preparation and implementation, ADB was closely involved in identifying potential problems and conducted regular reviews to resolve issues, including eight project review missions from 2010 to 2014, a special administration mission in

[23] This is equivalent to about 23,000 individuals employed full-time for 3.5 years. Note that paragraph 43 of the PCR had a different figure—2.84 million person-months. This validation uses the one reflected in Appendix 1 of the PCR.

2014, and the completion mission in 2016. ADB visited a few subproject sites, checked the physical progress of the project, reviewed compliance with social and environmental safeguards, and provided advice on various aspects of project implementation.

31. ADB also conducted regular procurement and disbursement audits and provided substantial assistance on consultant recruitment, implementation progress, and loan disbursement. On the whole, ADB assistance was adequate and was provided in a timely manner. Given that this was the first MFF loan, the efforts of ADB to closely monitor and keep up on the changing targets within the investment program, were commendable. However, it fell short in ensuring that these changes were properly documented, which would be crucial in assessing the achievements and impact of the investment program as well as document issues and actions to avoid recurring issues during project implementation. Nevertheless, this validation assesses the ADB performance as satisfactory for both the MFF and Project 5.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

32. The PCR rated the MFF and Project 5 as successful overall. Both were assessed as relevant, efficient, effective, and likely sustainable. The PCR concluded that the MFF and Project 5 were in line with the development strategy of the government and sector policy of ADB. It also concluded that expected outcomes and outputs were mostly achieved. The EIRRs for the MFF and Project 5 were higher than the social discount rate. Given the institutional capacity of the government and availability of resources, the MFF and Project 5 were likely sustainable. This validation assesses the MFF and Project 5 as successful overall.

Overall Ratings

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Relevance			
MFF001	Relevant	Relevant	
L2651	Relevant	Relevant	
Effectiveness			
MFF001	Effective	Effective	
L2651	Effective	Effective	
Efficiency			
MFF001	Efficient	Efficient	
L2651	Efficient	Efficient	
Sustainability			
MFF001	Likely sustainable	Likely sustainable	
L2651	Likely sustainable	Likely sustainable	
Overall Assessment			
MFF001	**Successful**	**Successful**	
L2651	**Successful**	**Successful**	
Preliminary Assessment of Impact			
MFF001	Satisfactory	Satisfactory	
L2651	Satisfactory	Satisfactory	

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Borrower and EA			
MFF001	Satisfactory	Satisfactory	
L2651	Satisfactory	Satisfactory	
ADB Performance			
MFF001	Satisfactory	Satisfactory	
L2651	Satisfactory	Satisfactory	
Quality of PCR		Satisfactory	Para. 38

ADB = Asian Development Bank, EA= executing agency, IED = Independent Evaluation Department, MFF = multitranche financing facility, PCR = project completion report.
Source: ADB Independent Evaluation Department.

B. Lessons

33. **Country level.** A lesson in the PCR indicated that project delays could have been mitigated had the government analyzed the reasons for implementation delays and developed measures to prevent recurrence. From ADB's side, this validation offers an additional lesson regarding the important role of having well-prepared program performance reports, where issues and actions to be taken are documented to ensure that lessons identified in earlier tranches under an MFF are captured in the design of succeeding tranches.

34. **Sector level.** The local contractor industry should be developed through more capacity building programs and technical and financial support. This validation adds another lesson. The over-targeting would have been avoided if a thorough sector-level demand analysis was conducted to identify both the physical targets and financial plans.

35. **Project level.** The provision for price escalation should be included in the contracts to avoid implementation delays. Also, the size of contract packages should be adjusted to attract bigger contractors to speed up the procurement process.

36. **DMF level.** Sex-disaggregated key indicators should be incorporated in ongoing and future investment programs. Also, to better monitor the achievements under an MFF, any revisions in the targets of the MFF entail a revised DMF and should be clearly reported in the PFRs of succeeding tranches. In assessing the economic benefits, this validation notes that in cases where road projects promote substantial economic development such as rural roads, the level of generated traffic needs to be explicitly considered, estimated, and valued accordingly in terms of consumers' surplus. It is incorrect to value generated traffic in terms of vehicle operating cost savings.

C. Recommendations for Follow-Up

37. The PCR suggested four recommendations, which this validation considers as appropriate:

(i) On monitoring the impact of the program, the PCR suggested that ADB, in association with the government, design and carry out a long-term socioeconomic monitoring program by conducting regular surveys and analyses to understand the yearly changes brought about by the investment program.

(ii) On road safety, the PCR recommended that rural road designs be strengthened to provide covered roadside drainage systems along residential areas, and provision and maintenance of road furniture and safety measures should be

monitored and promoted as a form of community participation. Road safety audits should be done periodically, and continuous road safety campaigns should be conducted for all road users, including drivers, villagers, and children.

(iii) Institutional support, capacity building and human resource development programs should be designed and incorporated in future rural road projects as well as advanced road asset management concepts and tools.

(iv) ADB should develop a methodology to appropriately identify and value the economic benefits of generated traffic of road projects to resolve the recurring issues on EIRR calculations.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

38. There was no project performance management system that was implemented. However, according to the report and recommendation of the President, the existing planning and monitoring procedures of the program would provide a database for all roads, including details of traffic before improvement, population served, social facilities along the alignment, and progress of individual road works that establish baseline data for monitoring indicators at the outcome and impact levels of the DMF of the MFF (footnote 1). The PCR did not assess the effectiveness of this system.

B. Comments on Program Completion Report Quality

39. The PCR was succinct and assessed all the evaluation criteria. The main shortcoming of the report was in the economic reevaluation of the project, particularly the shadow pricing and the identification and valuation of project economic benefits. There were also some inconsistencies in the reported figures (footnotes 23 and 24). The PCR also did not assess the project performance management system for the MFF and failed to report the targets and achievements of the MFF based on the revised targets and achievements of each tranche. Nonetheless, this validation assesses the quality of the PCR as satisfactory.

C. Data Sources for Validation

40. Data sources included the report and recommendation of the President, PCR, and mission reports.

D. Recommendation for Independent Evaluation Department Follow-Up

41. The PCR suggested that the project performance evaluation report be prepared when all the project roads will have been fully operational for more than 3 years. By then, traffic development, road maintenance, the physical condition of road furniture, public transport services, benefits attained, and impacts on poverty can be better assessed. This validation has a similar view with the PCR that the MFF should be evaluated at the earliest available time, particularly on how the government has maintained the roads after the 5-year maintenance provision under the contracts of the contractors has lapsed.