Report and Recommendation of the President to the Board of Directors

Project Number: 52328-001
July 2019

Proposed Loan and Technical Assistance Grant India: Maharashtra Rural Connectivity Improvement Project

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 3 July 2019)

Currency unit	–	Indian rupee (₹)
₹1.00	=	$0.014527
$1.00	=	₹68.83950

ABBREVIATIONS

ADB	–	Asian Development Bank
GAP	–	gender action plan
km	–	kilometer
MMGSY	–	Mukhya Mantri Gram Sadak Yojana (Chief Minister's Rural Road Scheme)
MRRDA	–	Maharashtra Rural Road Development Association
PAM	–	project administration manual
PISC	–	project implementation support consultant
PIU	–	project implementation unit
PMGSY	–	Pradhan Mantri Gram Sadak Yojana (Prime Minister's Rural Road Development Program)
PMU	–	project management unit
SDDR	–	social safeguards due diligence report
TA	–	technical assistance

NOTES

(i) The fiscal year (FY) of the Government of India and its agencies ends on 31 March. "FY" before a calendar year denotes the year in which the fiscal year ends, e.g., FY2019 ends on 31 March 2019.

(ii) In this report, "$" refers to United States dollars.

Vice-President	Shixin Chen, Operations 1
Director General	Hun Kim, South Asia Department (SARD)
Director	Mio Oka, Environment, Natural Resources and Agriculture Division, SARD
Team leader	Sanath Ranawana, Principal Portfolio Management Specialist, SARD
Team members	Mikael Anderson, Financial Management Specialist, SARD Cynthia Pancracia Ceniza, Senior Operations Assistant, SARD Gertrude Anne Diones, Operations Assistant, SARD Shiva Raju Dodla, Associate Project Officer (Transport), SARD Dennis Lopez, Project Officer, SARD Rachel Mendinueto, Associate Project Analyst, SARD Lyailya Nazarbekova, Principal Counsel, Office of the General Counsel Masahiro Nishimura, Senior Transport Specialist, East Asia Department (EARD) Rebekah Ramsay, Social Development Specialist, SARD Lee Ming Tai, Unit Head, Portfolio Management, EARD
Peer reviewer	David Salter, Principal Natural Resources and Agriculture Specialist, Southeast Asia Department

CONTENTS

PROJECT AT A GLANCE

1. Basic Data — **Project Number:** 52328-001

Project Name	Maharashtra Rural Connectivity Improvement Project	**Department /Division**	SARD/SAER
Country	India	**Executing Agency**	Maharashtra Rural Road Development Association
Borrower	Government of India		

	2. Sector	**Subsector(s)**	**ADB Financing ($ million)**
✓	**Agriculture, natural resources and rural development**	Rural market infrastructure	200.00
		Total	**200.00**

3. Strategic Agenda	**Subcomponents**	**Climate Change Information**	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	CO_2 reduction (tons per annum)	1,650
		Climate Change impact on the Project	Medium
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns	**ADB Financing**	
		Adaptation ($ million)	22.12
		Mitigation ($ million)	11.11

4. Drivers of Change	**Components**	**Gender Equity and Mainstreaming**	
Governance and capacity development (GCD)	Organizational development	Effective gender mainstreaming (EGM)	✓
Private sector development (PSD)	Public sector goods and services essential for private sector development		

5. Poverty and SDG Targeting		**Location Impact**	
Geographic Targeting	No	Rural	High
Household Targeting	No		
General Intervention on Poverty	Yes		
SDG Targeting	Yes		
SDG Goals	SDG1, SDG11, SDG13		

6. Risk Categorization: Low

7. Safeguard Categorization **Environment:** B **Involuntary Resettlement:** C **Indigenous Peoples:** C

8. Financing

Modality and Sources	**Amount ($ million)**
ADB	**200.00**
Sovereign Project (Regular Loan): Ordinary capital resources	200.00
Cofinancing	**0.00**
None	0.00
Counterpart	**96.00**
Government	96.00
Total	**296.00**

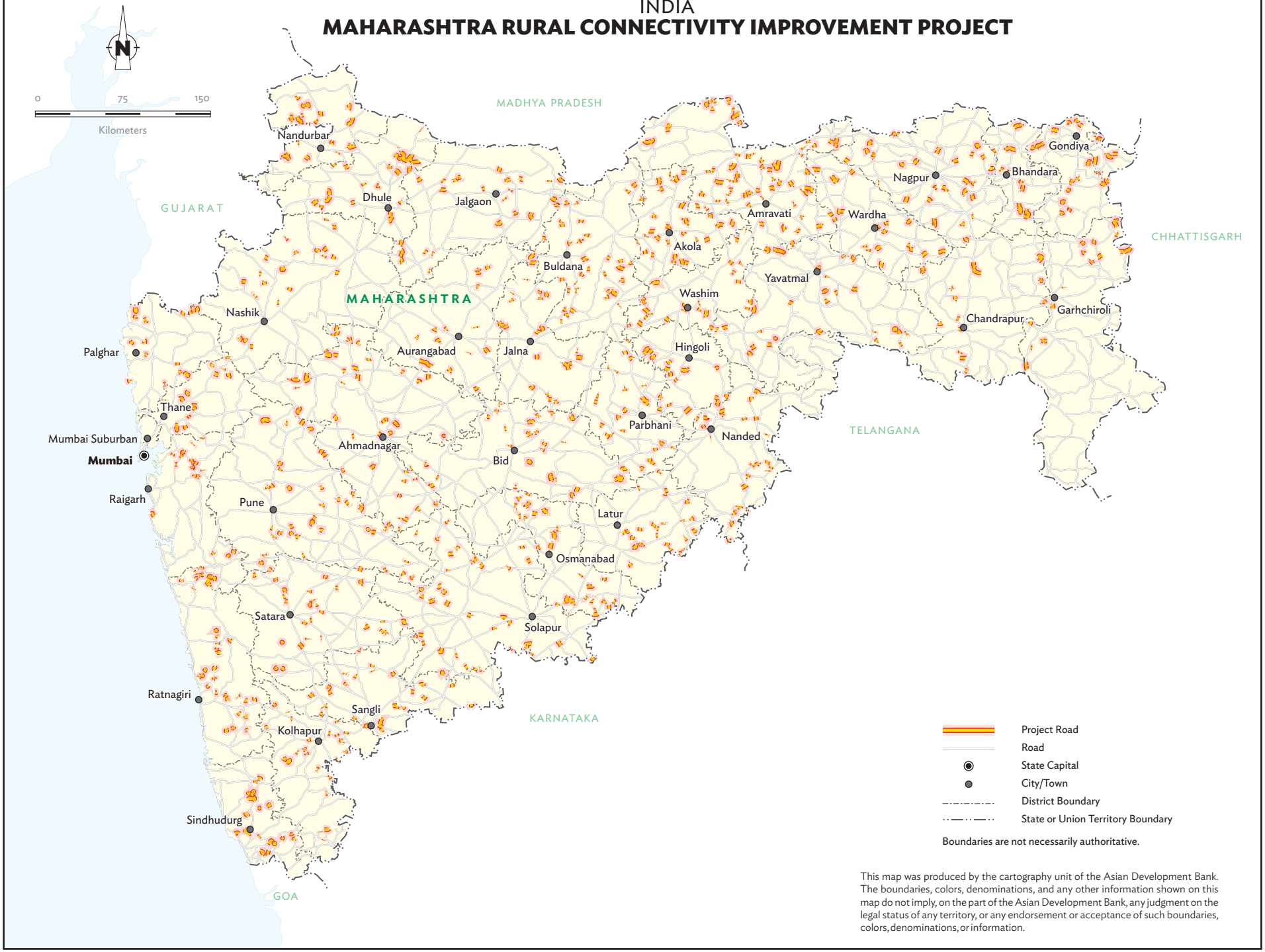
Note: An attached technical assistance will be financed on a grant basis by the Technical Assistance Special Fund (TASF-OTHERS) in the amount of $1,000,000.

Currency of ADB Financing: USD

Source: Asian Development Bank

INDIA

MAHARASHTRA RURAL CONNECTIVITY IMPROVEMENT PROJECT



This map was produced by the cartography unit of the Asian Development Bank. The boundaries, colors, denominations, and any other information shown on this map do not imply, on the part of the Asian Development Bank, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, colors, denominations, or information.

19-0422 ABV

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to India for the Maharashtra Rural Connectivity Improvement Project. The report also describes proposed technical assistance (TA) for the Institutional Strengthening of the Maharashtra Rural Road Sector for Sustainable Development, and if the Board approves the proposed loan, I, acting under the authority delegated to me by the Board, approve the TA.

2. The project aims to upgrade rural roads in 34 districts of the State of Maharashtra to all-weather standards. The roads will improve connectivity between habitations, productive agricultural lands, and economic growth centers across the state. This will enhance employment opportunities and help reduce poverty, especially in rural areas where about 55% of the state's population lives. The project will enhance agricultural productivity, add value to agricultural produce and will contribute to increasing the average growth rate of agriculture and allied activities to more than 5% per year by 2030—a target of the state's long-term strategic development plan, Vision 2030.[1]

II. THE PROJECT

A. Rationale

3. **Maharashtra economy**. Maharashtra is India's leading state in terms of its contribution to the national economy. In FY2017 the state accounted for 14.8% of India's national gross domestic product.[2] Driven by robust growth in financial and other services and manufacturing, Maharashtra's economy has been growing steadily. The state's gross domestic product averaged 7.4% growth per year from 2012 to 2017. However, economic development is concentrated around the urban centers of Mumbai, Pune and Thane. Mumbai alone accounts for 20% of the gross district value added,[3] while 4 of the state's 34 districts generate 52% of the gross district value added. Similarly, the state's human development index shows imbalances across districts, with 27 of the 34 districts recording below-average values. Consequently, income inequality in Maharashtra is one of the highest among all states in India. Despite the state's impressive and sustained economic growth, about 20 million people, or 17% of the state's population, still live below the national poverty line.[4] Poverty is pronounced in rural areas, where on average about 24% of the population lives below the poverty line (in some districts the figure is as high as 40%).

4. Agriculture in Maharashtra is in distress. Agriculture accounts for about 47% of employment, engages as much as 79% of the rural labor force, and contributes about 11% of Maharashtra's gross state domestic product. However, agriculture's contribution to gross state domestic product is in decline, and recorded negative annual growth during four of the past seven years.[5] Crop losses are a persistent problem, caused mainly by climate variability, and limited

---

[1] State Government of Maharashtra, Planning Department. 2018. *Vision 2030*. Mumbai.

[2] State Government of Maharashtra, Planning Department, Directorate of Economics and Statistics. March 2018. *Economic Survey of Maharashtra, 2017–2018*. Mumbai.

[3] Gross value added is the value of output less the value of intermediate consumption; it is a measure of the contribution to GDP made by an individual producer, industry or sector. Organisation for Economic Co-operation and Development. 2001. OECD.Stat Glossary of Statistical Terms.

[4] Government of India, Planning Commission. June 2014. *Report of the Expert Group to Review the Methodology for Measurement of Poverty*. Delhi.

[5] State Government of Maharashtra, Planning Department. 2018. *Economic Survey of Maharashtra 2017–2018*. Mumbai.

access to infrastructure (for processing and storage) and marketing facilities.[6] Smallholders, who make up 60% of all landholders in the state, are particularly vulnerable. Continuous crop losses result in high farmer indebtedness and higher suicide rates.[7] Women are particularly disempowered in at least two main areas: access to resources, and representation and leadership in groups.[8] Improving rural road infrastructure can help overcome these setbacks and address the causes of persistent poverty and inequality among remote rural communities.

5. **Overview of the road subsector.** Maharashtra has an extensive network of roads consisting of national and state highways and other district roads and village roads. More than 80% of passengers and 60% of freight traffic use roads as the dominant mode of transportation. Rural roads, which comprise "other district roads" and "village roads," make up 67% of the state's road network. About 55% of these rural roads are unsealed making them unsuitable for motorized traffic and impassable during the rainy season.[9] Many rural community members, including women, children, and seniors, rely on these roads to access health care and educational facilities. Road safety is also a growing concern; in 2017, Maharashtra accounted for 8.3% of all fatal road accidents in India.[10] Upgrading rural road networks to all-weather condition will contribute significantly towards improving road safety and access to markets and basic services, especially for rural people in the state.

6. **Government programs for the road subsector.** The Government of India recognizes the importance of rural connectivity in improving rural livelihoods and alleviating poverty. In 2000, the Government of India launched the Pradhan Mantri Gram Sadak Yojana (PMGSY), a national plan to improve connectivity by constructing all-weather roads to eligible unconnected habitations in rural areas.[11] Under the PMGSY, the Maharashtra state government as of 2018 had completed upgrading about 25,600 kilometers (km) of roads, connecting 8,315 habitations. Following the PMGSY model, the state government in 2016 launched the Mukhya Mantri Gram Sadak Yojana (MMGSY) program to connect villages by improving roads in remote rural areas that had not been reached by the PMGSY.[12] The MMGSY aims to cover 30,000 km of rural roads over 5 years. By January 2019, the state had completed upgrading about 7,000 km of roads under the MMGSY.

7. The state government's Vision 2030 presents a five-pillar strategy to achieve sustainable, balanced, and inclusive socioeconomic development, with a focus on (i) agriculture, (ii) infrastructure, (iii) industry, (iv) the social sector, and (v) governance. In agriculture, the state aims to increase the average annual growth rate to more than 5% by 2030. To reach this target, the state will take measures to improve the productivity of horticulture and floriculture, and promote commercialization, and value addition to agricultural products. In terms of infrastructure, Vision 2030 envisions building quality, reliable, sustainable, safe, and affordable roads that are accessible to all. The infrastructure plan includes provisions to improve national and state highways and rural road networks to establish major economic corridors. The state government

---

[6] P. Udmale, Y. Ichikawa, S. Manandhar, H. Ishidaira, and A. Kiem. 2014. Farmers' perception of drought impacts, local adaptation and administrative mitigation measures in Maharashtra State, India. *International Journal of Disaster Risk Reduction.* 10 (Part A). pp. 250–269.

[7] V. Arya et al. 2018. Trends and Socio-Economic Determinants of Suicide in India: 2001–2013. *Social Psychiatry and Psychiatric Epidemiology.* 53 (3). pp. 269–278.

[8] S. Gupta, P. Pingali, and P. Pinstrup-Andersen. 2017. Women's Empowerment in Indian Agriculture: Does Market Orientation of Farming Systems Matter? *Food Security.* 9 (6). pp. 1,447–1,463.

[9] Government of Maharashtra. Rural Development Department. November 2018. Policy on Maintenance of Rural Roads. Mumbai.

[10] Government of India, Ministry of Road Transport and Highways. July 2018. *Road Accidents in India–2017*. New Delhi.

[11] Government of India, Ministry of Rural Development. 2019. Prime Minister's Rural Roads Scheme. New Delhi.

[12] Government of Maharashtra, Rural Development and Panchayat Taj Development. 2019. Chief Minister Gram Sadak Yojana.

intends to improve its road network using its own resources and assistance from international development partners.

8. **Value added by ADB assistance.** ADB supports rural road development programs in several South Asia countries including Bangladesh, India, Nepal, and Sri Lanka. The project will build on the success of these rural road programs, which have highlighted the importance of (i) designing rural roads to all-weather standards with climate-resilient and safety features; (ii) improving road maintenance; and (iii) strengthening institutional capacity. ADB will add value by promoting climate-resilient designs (e.g. road elevations and cross and side drainage; road bases and pavements; earthworks and compaction). These measures will significantly reduce the ensuing burden of maintaining roads. In addition, civil works contracts will include a provision to carry out post-completion maintenance for 5 years. This measure aims to assess the efficacy of the private sector in undertaking long-term maintenance of roads. The possible benefits include the assurance of better life-cycle quality, greater operational efficiency, and cost effectiveness of road maintenance.[13]

9. **Alignment with the government and Asian Development Bank priorities.** The project is aligned with (i) the state government's Vision 2030; (ii) the country partnership strategy for India, 2018–2022 of the Asian Development Bank (ADB)—specifically pillar 2 on inclusive provision of infrastructure network and services; and (iii) ADB's Strategy 2030, specifically the strategy's operational priorities on (a) promoting rural development and food security; (b) tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability; and (c) strengthening governance and institutional capacity.[14] The project is included in the country operations business plan for India, 2019–2021.[15]

B. Impact and Outcome

10. The project is aligned with the following impact: Quality, reliable, sustainable, safe, and affordable roads that provide equitable access for all developed (footnote 1). The project will have the following outcome: Road transport efficiency in 34 districts in Maharashtra increased.[16]

C. Outputs

11. **Output 1: Conditions and safety of selected rural roads improved and maintained.** The project team will improve the condition of about 2,100 km of rural roads—connecting rural communities with productive agricultural areas and socioeconomic centers—to all-weather standards, with climate resilience and safety features.[17] The project team will incorporate climate resilience measures such as improved cross and side drainage, increased surface elevations, and stronger embankments in the designs. Environmentally friendly alternative sealing options such as asphalt blended with plastic waste will be piloted on selected road segments. The roads will also be covered under contractual maintenance for 5 years following construction.[18]

---

[13] It is estimated that for every $1.00 spent on preventive maintenance, up to $3.00 can be saved on future reconstruction. ADB. 2014. *Strategic Roadmap for Development Partner Support to O&M of Afghanistan Roads.* Manila.

[14] ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila; ADB. 2017. *Country Partnership Strategy: India, 2018–2022—Accelerating Inclusive Economic Transformation*. Manila.

[15] ADB. 2018. *Country Operations Business Plan: India, 2019–2021*. Manila.

[16] The design and monitoring framework is in Appendix 1.

[17] Roads were selected from the priority list of the district road development plans. Safety measures include cautionary and information signs, guard posts, and speed breakers.

[18] The same contractors that build the roads will perform routine maintenance for 5 years. The government will finance all maintenance costs.

12. **Output 2: Capacity of rural infrastructure agency and awareness among road users in the state enhanced.** Capacity development of rural infrastructure agency will involve training the Maharashtra Rural Road Development Association (MRRDA) on road safety, road asset management, contract management, and climate resilient design and construction. Capacity development of road users in the state will include (i) improving road users' awareness on road safety and gender-based violence (including sexual exploitation, human trafficking, and prevention of sexually transmitted infections); and (ii) enhancing women workers' road construction and maintenance skills. Under this output, the project team will develop manuals for construction and maintenance of rural roads with climate-resilient and gender-inclusive designs.

D. Summary Cost Estimates and Financing Plan

13. The project is estimated to cost $296.00 million (Table 1). Detailed cost estimates by expenditure category and by financier are in the project administration manual (PAM).[19]

Table 1: Summary Cost Estimates
($ million)

Item			Amount[a]
A.	**Base Cost**[b]		
	1.	Conditions and safety of selected rural roads improved and maintained	247.99
	2.	Capacity development of rural infrastructure agency and awareness among road users in the State enhanced[c]	7.09
		Subtotal (A)	**255.08**
B.	**Contingencies**[d]		**18.34**
C.	**Financial Charges During Implementation**[e]		**22.60**
		Total (A+B+C)	**296.00**

Note: Numbers may not sum precisely because of rounding.
[a] Includes taxes and duties of $24.66 million to be financed from the loan. Such amount does not represent an excessive share of the project cost.
[b] In 2019 prices as of May 2019.
[c] Includes the cost of a project implementation and support consultant.
[d] Physical contingencies computed at 5.0% for civil works; and 10.0% for surveys and capacity building. Price contingencies computed at average of 1.6% on foreign exchange costs and 5.0% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
[e] Includes interest and commitment charges. Interest during construction for the ordinary capital resources loan has been computed at the 5-year United States dollar fixed swap rate plus an effective contractual spread of 0.50% and maturity premium of 0.10%. Commitment charges for the ordinary capital resources loan are 0.15% per year to be charged on the undisbursed loan amount.
Sources: The Government of India and Asian Development Bank estimates.

14. The government has requested a regular loan of $200 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including a grace period of 5 years; an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a commitment charge of 0.15% per year; and such other terms and conditions set forth in the draft loan and project agreements. Based on the straight-line method, the average maturity is 15.25 years, and the maturity premium payable to ADB is 0.10% per year.

15. The summary financing plan is in Table 2. ADB and the government will finance the expenditures in relation to investment costs, recurrent costs, and contingencies during implementation.[20]

[19] Project Administration Manual (accessible from the list of linked documents in Appendix 2).
[20] The government will assume taxes and duties, and financing charges during implementation.

Table 2: Summary Financing Plan

Source	Amount ($ million)	Share of Total (%)
Asian Development Bank	200.00	67.6
Ordinary capital resources (regular loan)		
Government	96.00	32.4
Total	**296.00**	**100.0**

Source: Asian Development Bank estimates.

16. Climate mitigation is estimated to cost $11.11 million and climate adaptation is estimated to cost $22.12 million. ADB will finance 100% of the mitigation and adaptation costs. Details are in the Climate Change Assessment.[21]

E. Implementation Arrangements

17. The State of Maharashtra, acting through MRRDA, will be the executing agency.[22] MRRDA will establish: (i) a project management unit (PMU), with the MRRDA secretary cum chief executive officer appointed as the project director and assisted by two deputy project directors; and (ii) 34 project implementation units (PIUs) in the districts, each headed by an executive engineer and supported by three deputy engineers. The PIUs will be responsible for the day-to-day implementation and supervision of project activities. The PIUs fall under six regional offices, each headed by a superintending engineer. The regional offices will be responsible for authorizing procurement and payments on contracts and for monitoring and reporting to the PMUs. A team of project implementation support consultants will support the PMU and PIUs.

18. The implementation arrangements are summarized in Table 3 and described in detail in the PAM.

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	September 2019–September 2024[a]		
Estimated completion date	30 September 2024		
Estimated loan closing date	31 March 2025		
Management			
(i) Executing agency	The State of Maharashtra acting through MRRDA		
(ii) Implementation unit	MRRDA, 1 project management unit, 34 project implementation units in the districts under the six regional offices (1,395 full-time staff)		
Procurement	Open competitive bidding	195 contracts (civil works)	About $236.4 million
Consulting services	QCBS (PISC)	753 person-months national	About $7.0 million
Retroactive financing and/or advance contracting	Retroactive financing and advance contracting will be used for goods, civil works, and consulting services. Retroactive financing will be provided to finance expenditures incurred before the loan becomes effective, but not earlier than 12 months before the date of signing of the loan agreement and not exceeding 20% of the respective loan amount.		
Disbursement	The loan proceeds will be disbursed following ADB's *Loan Disbursement Handbook* (2017, as amended from time to time) and detailed arrangements agreed upon between the Government of India and ADB.		

ADB = Asian Development Bank, MRRDA = Maharashtra Rural Road Development Association, PISC = project implementation support consultant, QCBS = quality- and cost-based selection.

[a] Civil works contracts will include 5-year routine maintenance, which will extend beyond the project implementation period. The government will finance all maintenance costs.

Source: Asian Development Bank.

[21] Climate Change Assessment (accessible from the list of linked documents in Appendix 2).

[22] The State Government of Maharashtra established the MRRDA as a special purpose vehicle to implement the PMGSY and the MMGSY. It was established on 8 May 2003 through a government resolution, under the Society Registration Act, 1860.

19. **Project readiness and implementation plan.** MRRDA finalized the master bid documents and obtained ADB's no-objection approval under the prior review procedures for five works packages. MRRDA issued the invitation to bid for all civil works contracts and request for expressions of interest for the project implementation support consultants as part of the advance actions. The detailed project readiness activities and overall project implementation plan are in the PAM.

III. ATTACHED TECHNICAL ASSISTANCE

20. ADB will provide transaction TA for Institutional Strengthening of the Maharashtra Rural Road Sector for Sustainable Development.[23] The TA will support MRRDA to improve management performance by implementing institutional development initiatives with international expertise. The TA will focus on (i) road asset management, including performance-based maintenance; (ii) road safety; (iii) climate-resilient design and construction; and (iv) web-based real-time project monitoring. ADB will recruit an international consulting firm in accordance with the ADB Procurement Policy (2017, as amended from time to time) to carry out the TA activities. The TA is estimated to cost $1 million, which will be financed on a grant basis by ADB's Technical Assistance Fund (TASF-Other sources). The government will provide support in the form of counterpart staff, office accommodation, office supplies, secretarial assistance, domestic transportation, and other in-kind contributions.

IV. DUE DILIGENCE

A. Technical

21. MRRDA prepared the detailed design for upgrading about 2,100 km of single-carriage roads, which were in various conditions. The designs complied with the government's standards and specifications for improved design and construction of rural roads. MMRDA incorporated road safety measures (such as carrying out road safety audits and precautionary interventions along high-risk road segments) and climate-resilient rural road construction measures (such as slope stabilization, drainage, and cross-drainage measures) in the designs. MRRDA also adopted a context-sensitive design approach to incorporate community concerns. Construction will use proven technology (such as polymer-modified asphalt and asphalt blended with plastic waste as sealing options) and materials compatible with local conditions.

B. Economic and Financial

22. **Economic viability.** ADB carried out the economic analysis in accordance with ADB's Guidelines for the Economic Analysis of Projects.[24] The principal benefits considered in the analysis are transport cost savings in terms of vehicle operating costs, travel time savings of the existing and incremental traffic on these roads over the analysis period, and lower greenhouse gas emissions. Other unquantified benefits include improved road safety, higher climate resilience, and improved quality of life for rural communities. The economic analysis indicated that the project is economically viable, with an economic internal rate of return of 14.2%. Road packages in all districts have an economic internal rate of return above the acceptable rate of return of 9%. Sensitivity analysis indicated that, with a 10% increase in capital costs or a 10% decrease in benefits, the overall investment remains economically viable. The analysis assumes that 50% of vehicle operating cost savings will be accrued to vehicle owners and 50% will be

[23] Attached Technical Assistance Report (accessible from the list of linked documents in Appendix 2).
[24] ADB. 2017. *Guidelines for the Economic Analysis of Projects*. Manila.

passed on to the road users by the operators in the case of public transport and freight vehicles. The project directly generates benefits that accrue to the poor and vulnerable population, with the poverty impact ratio estimated at 41.1%.[25]

23. **Financial sustainability.** The project will not generate revenue. Instead, MRRDA will be responsible for maintaining the roads improved under the project for the first 10 years, after which the roads and their maintenance will be handed over to local governments. The state government will finance road maintenance in accordance with the PMGSY guidelines. However, past practice suggests that it is unlikely that sufficient funds will be provided to fully cover maintenance costs. MRRDA is developing a maintenance policy to improve the sustainability of the constructed and upgraded rural roads by ensuring that adequate resources are committed for routine and periodic maintenance.[26] To further mitigate the risk of insufficient road maintenance, MRRDA will integrate the following measures in the project: (i) include provision in the road construction contracts for the contractor to carry out routine maintenance of the road for the first 5 years after completion of the works; (ii) prepare manuals for performance-based maintenance; (iii) project implementation support consultants will prepare training programs for MRRDA and local governments to improve their capacity to maintain roads, accurately estimate the resources required, and prepare annual budgets that prioritize maintenance over construction; and (iv) under the attached TA, consultants will provide capacity building to MRRDA to improve its road asset management system.

C. Governance

24. **Financial management.** ADB conducted a financial management assessment of MRRDA, covering fund-flow arrangements, governance, staffing, budgeting, accounting and financial reporting systems, internal control procedures, financial information systems, and internal and external auditing arrangements. The assessment determined that the financial management risk was *moderate,* mainly because MRRDA was inexperienced with ADB procedures. The assessment found that (i) MRRDA has the minimum required policies and procedures in place, and that (ii) the statutory audit function of MRRDA is carried out by an independent auditor (appointed in accordance with PMGSY guidelines) and complies with audit standards issued by the comptroller and auditor general of India. However, the assessment also identified the following risks: (i) limited financial staff in the PMU, (ii) MRRDA's lack of experience in ADB procedures, (iii) irregular interim financial reporting within MRRDA, and (iv) decentralized flow of funds from the MRRDA head office to the regions. These risks will be mitigated by (i) hiring an additional financial management specialist for the project to be placed within MRRDA head office, (ii) providing training to MRRDA in ADB's procedures, (iii) ensuring that MRRDA submits quarterly financial reports and internal audits; and (iv) ensuring that MRRDA maintains centralized storage of its financial records and backs them up of regularly. Moreover, MRRDA will maintain separate books of accounts for the project and will employ an auditor acceptable to ADB, who will follow auditing standards acceptable to ADB and will audit the project financial statements annually.

25. **Procurement and anticorruption.** Procurement of works will be in accordance with the ADB Procurement Policy (2017 as amended from time to time) and the Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The assessment of the procurement capacity of MRRDA concluded that it has the capacity to undertake procurement under the project. The government will follow open competitive bidding (national advertisement) procedures and will use the standard bidding document that was used for the India Rural Connectivity

[25] Economic and Financial Analysis (accessible from the list of linked documents in Appendix 2).
[26] Government of Maharashtra, Rural Development Department. 2018. *Policy on Maintenance of Rural Roads.* Mumbai.

Investment Program.[27] Procurement will use the government's electronic procurement system (e-procurement), which has been improved in agreement with ADB.[28] The procurement procedures adopted under the project are detailed in the procurement plan. India's Prevention of Corruption Act (1988 and amended in 2018) combats corruption in government agencies and public sector business. Maharashtra's Anti-Corruption Bureau is responsible for investigating corruption allegations in the state. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the national government and the state government. Specific policy requirements and supplementary measures are described in the PAM.

D. Poverty, Social, and Gender

1. Poverty Reduction and Social Impact

26. The project preparatory phase involved widespread consultations with about 29,000 people living in the state MRRDA carried out transect walks with community members—both women and men—along all roads. The community members were overwhelmingly supportive of the project and expressed a desire to improve mobility between commercial centers to increase economic and employment opportunities. Local communities expressed their belief that the provision of all-weather roads in rural areas would contribute to reducing poverty. It is expected that the project will generate about 2 million person-days of employment for local communities (of which 25% will be for women) over the construction and maintenance periods. The project roads will improve farmers' access to markets, which in turn will contribute towards improved agricultural productivity and will increase farmers' incomes. Roads will also promote investment in agribusiness and agriculture value chain infrastructure.

2. Gender and Development

27. **Gender mainstreaming.** The project is classified *effective gender mainstreaming*. The project's gender analysis highlighted the need to promote gender equality in the community and within MRRDA. ADB prepared a gender action plan (GAP), which delineates activities with indicators and targets, responsible agencies, and time frames for implementing and monitoring and reporting on GAP activities.[29] The GAP (i) guarantees training and employment for local women in construction and maintenance; (ii) provides women and children with increased awareness of road safety and gender-based violence (including sexual exploitation, human trafficking, and prevention of sexually transmitted infections); (iii) provides eligible female MRRDA staff with increased awareness and/or skills related to road safety, road asset management, financial management, and climate-resilient design and construction; and (iv) ensures that all project outputs incorporate gender-inclusive features.

E. Safeguards

28. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows.[30]

---

[27] ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility, Technical Assistance, and Administration of Technical Assistance to India for the Rural Connectivity Investment Program*. Manila.

[28] ADB approved e-procurement for national competitive bidding in all investment program states during 2009–2011.

[29] Gender Action Plan (accessible from the list of linked documents in Appendix 2).

[30] ADB. 2009. *Safeguard Policy Statement*. Manila.

29. **Environment (category B).** ADB screened and assessed the impacts from all the project roads using an environmental checklist developed for similar projects and adapted to local conditions.[31] ADB prepared an initial environmental examination report from these checklists, in line with ADB's Safeguard Policy Statement (2009). The project involves upgrading existing roads, with minimal or no land acquisition. Most of the negative impacts are related to construction; they are site-specific, limited within the construction corridor, and easily mitigated. Anticipated environmental impacts are typical of road maintenance projects and include generation of dust, noise, exhaust (from haul trucks and hot mix plants), and waste (from construction and worker camps); water contamination; and occupational health and safety hazards. The MRRDA has integrated mitigation measures for all anticipated impacts through the incorporation of a standard environmental management plan in the bidding documents and provision of road-specific environmental management plans with the detailed project reports. MRRDA has formed an integrated social and environmental grievance redress mechanism to receive feedback and complaints from affected parties and address these complaints during construction and operation. To ensure the effective implementation of safeguard requirements, environmental experts will augment MRRDA in the regions. The initial environmental examination report is disclosed on the ADB and MRRDA websites.

30. With rainfall projected to increase because of climate change in the near term, more frequent and intense flooding, particularly on rural roads near river courses, is anticipated.[32] MRRDA has adopted climate-resilient road designs to address this risk and, in consultation with local communities, has identified vulnerable sections of rural roads to be upgraded under the project. Adaptation measures will include increasing cross-drainage capacities, constructing new cross-drains, increasing final road surface elevations, strengthening road embankments with retaining walls, and constructing new side drains to protect pavement against prolonged submergence. The cost of these adaptation measures is estimated at $22.12 million and will be incorporated in the civil works. The project contributes to climate change mitigation by improving the road surfaces thereby enabling vehicles to travel at optimum speed which reduces carbon emissions. The corresponding cost of mitigation measures is estimated at $11.11 million.

31. **Involuntary resettlement (category C).** ADB screened 100% of the project for involuntary resettlement impacts during project preparation. The project will not require involuntary land acquisition, or cause physical or economic displacement of people. Details of the social safeguard screening along all roads are documented in the social safeguards due diligence reports.[33] The project has adequate funding and institutional capacity, and arrangements are in place for involuntary resettlement screening throughout the project life cycle.

32. **Indigenous peoples (category C).** ADB screened 100% of the project for impacts on indigenous peoples during project preparation. The screening confirms that indigenous peoples (scheduled tribes) are present within the state as individual households living among broader communities rather than distinct communities. The project will not directly or indirectly affect the dignity, human rights, livelihood systems, or culture of indigenous peoples because the project works will not impact territories or natural or cultural resources that indigenous peoples own, use, occupy, or claim as an ancestral domain or asset. Details of the social safeguard screening along

[31] ADB investment programs under PMGSY in India and rural road connectivity programs in Sri Lanka, Nepal, and Bangladesh.

[32] Based on the UN Office for Disaster Risk Reduction Global Risk Data Platform.

[33] ADB compiled the social safeguards due diligence report (SDDR) through the community-based and participatory transect walk method frequently used in the design of ADB-financed rural road projects. The method is described in this project's social safeguards due diligence guideline (SDDG). The SDDG is also commonly referred to as a "community participation framework" and the SDDR as a "community participation plan." In this report, the titles SDDR and SDDG are used to align with standard language adopted in ADB's Safeguard Policy Statement.

all 799 roads are documented in the social safeguards due diligence reports. The project has adequate funding and institutional capacity, and arrangements are in place for indigenous peoples screening throughout the project life cycle.

F. Summary of Risk Assessment and Risk Management Plan

33. Significant risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.[34]

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigation Measures
Extreme weather conditions could cause significant damage to the road network	To address climate change impacts, the roads will adopt climate resilience parameters on slope protection where slopes are subject to water-level fluctuations; rigid pavement of reinforced concrete at submersible road sections; and additional cross drainage.
Low response by contractors during procurement	MRRDA will advertise contract packages via the government's e-procurement system to increase coverage and attract interest from a diverse group of contractors.
Inadequate funds for road maintenance may cause roads to deteriorate prematurely	To improve sustainability, MRRDA is developing a road maintenance policy. In addition, the project will use 5-year maintenance contracts, provide capacity building in road maintenance and asset management, and obtain additional assurances from the Government of India and State Government of Maharashtra that sufficient funds will be provided for maintenance throughout the estimated economic life of the improved roads.

MRRDA = Maharashtra Rural Road Development Association.
Source: Asian Development Bank.

V. ASSURANCES

34. The government and MRRDA have assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, financial management and disbursement as described in detail in the PAM and loan documents.

35. The government and MRRDA have agreed with ADB on certain covenants for the project, which are set forth in the draft loan agreement.

VI. RECOMMENDATION

36. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of $200,000,000 to India for the Maharashtra Rural Connectivity Improvement Project, from ADB's ordinary capital resources, in regular terms, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 25 years, including a grace period of 5 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

Takehiko Nakao
President

16 July 2019

[34] Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

DESIGN AND MONITORING FRAMEWORK

Impact the Project is Aligned with
Quality, reliable, sustainable, safe, and affordable roads that provide equitable access for all developed (Vision 2030)[a]

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Road transport efficiency in 34 districts in Maharashtra increased	**By 2025**: a. Average travel time along project roads reduced by 50% (2018 baseline: 4 minutes/km) b. Average daily vehicle-km increased to 499,200 (2018 baseline: 311,250 vehicle-km) (RFI A)	a–b. Post-implementation measurement and traffic survey by MRRDA and verified by State Quality Monitor[b]	Extreme weather conditions beyond what is anticipated cause severe damage to the rural road network
Outputs 1. Conditions and safety of selected rural roads improved and maintained[c]	**By 2024:** 1a. At least 2,100 km of rural roads improved to all-weather standards with climate resilience and safety features (2018 baseline: 0) (RFI B)[d] 1b. 5-year maintenance contracts awarded and commenced (2018 baseline: NA)[e] 1c. 2.0 million person-days of employment generated for semiskilled and unskilled labor in road construction and maintenance (at least 25% of employed are women) (2018 baseline: 0)[f]	1a–c. Quarterly monitoring reports by MRRDA	Delayed release of counterpart funds could hamper the completion of works
2. Capacity of rural infrastructure agency and awareness among road users in the state enhanced	**By 2024** 2a. At least 75% of MRRDA project staff reported increased awareness and/or knowledge related to road safety, road asset management, contract management, and climate-resilient design and construction (2018 baseline: 0) 2b. Manuals for construction and maintenance of climate-resilient, gender-inclusive rural road designs developed and endorsed by MRRDA (2018 baseline: NA) 2c. At least 50% of school students, teachers, and parents (at least 30% women) and Anganwadi workers[g] along project roads reported increased awareness on road safety and gender-based violence (including sexual	2a and 2c. Post-implementation survey by MRRDA 2b. Government endorsement memo	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	exploitation, human trafficking, and STI prevention) (2018 baseline: 0) 2d. At least 80% of trained workers (of which 50% are women) demonstrated skills in road construction and maintenance (2018 baseline: NA) 2e. Annual road safety audits of at least 25% of the project roads completed (2018 baseline: 0)	2d. Post-training test. 2e. Road safety audit reports by MRRDA	
Key Activities with Milestones **Output 1: Conditions and safety of selected rural roads improved and maintained** 1.1 Award contracts for improving about 2,100 km of roads to all-weather standards by Q1 2020; completing construction of these roads by Q1 2022; and maintaining these roads for 5 years after project completion. **Output 2: Capacity of rural infrastructure agency and awareness among road users in the State enhanced** 2.1 Mobilize project implementation support consultants by Q4 2019. 2.2 Create capacity development training programs for MRRDA and project communities by Q1 2020. 2.3 Conduct the training programs by Q1 2022. 2.4 Develop manuals for road safety, performance-based maintenance, and climate-resilient and gender-inclusive design and construction by Q2 2020. 2.5 Conduct annual road safety audits (2020–2024).			
Project Management Activities • Recruit PISC • Recruit TA consultant • Conduct environment management plan activities • Develop and implement web-based real-time project monitoring system • Organize GAP activities • Conduct annual and midterm review missions • Prepare project completion report			
Inputs ADB: $200.00 million (regular OCR loan) Government: $96.00 million Technical assistance (TASF-Others): $1.00 million			
Assumptions for Partner Financing Not Applicable			

ADB = Asian Development Bank, km = kilometer, GAP = gender action plan, MRRDA = Maharashtra Rural Road Development Association, NA= not applicable, OCR = ordinary capital resources, PISC = project implementation support consultant, Q = quarter, RFI = results framework indicator, STI = sexually transmitted infection, TA = technical assistance, TASF = Technical Assistance Special Fund.

[a] State Government of Maharashtra, Planning Department. 2018. *Vision 2030*. Mumbai.

[b] An independent monitoring system established under PMGSY.

[c] Roads were selected from the priority list of the District Road Development Plans in 34 districts in Maharashtra.

[d] Climate resilience measures such as improved cross and side drainage, increased surface elevations, and strengthening of embankments will be incorporated into the designs. Safety measures include cautionary and information signs, guard posts, and speed breakers.

[e] The same contractors that built the roads will perform routine maintenance for 5 years. The government will finance all maintenance costs.

[f] The project is expected to generate an estimated 2 million person-days of employment for local communities (of which 25% will be for women) over the construction and maintenance periods.

[g] Anganwadi workers are people employed under the Integrated Child Development Service Scheme of India to provide nutrition, immunization and health care services to pregnant women and adolescent girls.

Contribution to the ADB Results Framework

RFI A: Use of roads built or upgraded. Target: 499,200 vehicle-km.

RFI B: Roads built or upgraded (km). Target: 2,100 km.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=52328-001-3

1. Loan Agreement
2. Project Agreement
3. Sector Assessment (Summary): Agriculture, Natural Resources, and Rural Development
4. Project Administration Manual
5. Contribution to the ADB Results Framework
6. Development Coordination
7. Economic and Financial Analysis
8. Country Economic Indicators
9. Summary Poverty Reduction and Social Strategy
10. Risk Assessment and Risk Management Plan
11. Attached Technical Assistance Report
12. Climate Change Assessment
13. Gender Action Plan
14. Initial Environmental Examination

Supplementary Documents

15. Social Safeguards Due Diligence Guidelines
16. Financial Management Assessment
17. Climate Risk and Vulnerability Assessment