ADB

Technical Assistance Report

Project Number: 42267-032
Knowledge and Support Technical Assistance (KSTA)
September 2021

India: Promoting Smart and Integrated Urban Planning for Livability and Cultural Economy in Rajasthan

Asian Development Bank

ABBREVIATIONS

ADB	–	Asian Development Bank
COVID-19	–	coronavirus disease
EAKPF	–	e-Asia and Knowledge Partnership Fund
ICT	–	information and communication technology
TA	–	technical assistance
ULB	–	urban local body

NOTE

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

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KNOWLEDGE AND SUPPORT TECHNICAL ASSISTANCE AT A GLANCE

1.	Basic Data			Project Number: 42267-032	
	Project Name	Promoting Smart and Integrated Urban Planning for Livability and Cultural Economy in Rajasthan	**Department/Division**	SARD/SAUW	
	Nature of Activity	Capacity Development	**Executing Agency**	Local Self Government Department (LSGD)	
	Modality	Regular			
	Country	India			

2.	Sector	Subsector(s)		ADB Financing ($ million)	
				Total	0.00

3. Operational Priorities		Climate Change Information	
✓	Addressing remaining poverty and reducing inequalities	GHG Reductions (tons per annum)	0.000
✓	Accelerating progress in gender equality	Climate Change impact on the Project	Medium
✓	Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability	**ADB Financing**	
		Adaptation ($ million)	0.00
✓	Making cities more livable	Mitigation ($ million)	0.00
✓	Strengthening governance and institutional capacity		
		Cofinancing	
		Adaptation ($ million)	0.04
		Mitigation ($ million)	0.03

Sustainable Development Goals	Gender Equity and Mainstreaming	
SDG 11.a, 11.b	Some gender elements (SGE)	✓
SDG 13.a	**Poverty Targeting**	
	General Intervention on Poverty	✓

4.	Risk Categorization	Low

5.	Safeguard Categorization	Safeguard Policy Statement does not apply

6. Financing

Modality and Sources	Amount ($ million)
ADB	**0.00**
None	0.00
Cofinancing	**0.75**
Republic of Korea e-Asia and Knowledge Partnership Fund (Full ADB Administration)	0.75
Counterpart	**0.00**
None	0.00
Total	**0.75**

Currency of Financing: US Dollar

I.   INTRODUCTION

1.   The knowledge and support technical assistance (TA) will support the Government of Rajasthan in its efforts to improve the quality of life of people and drive cultural economic growth by harnessing technology for urban planning, development, and management. Through the application of smart technology in urban planning, the TA will support the state government in strengthening urban planning by bringing various sectors and disciplines together in search of synergy and developing integrated urban solutions that make better use of local resources and assets so that cities can thrive.

2.   The Government of India requested the TA, which is included in the country operations business plan for India, 2021–2023 of the Asian Development Bank (ADB).[1] The TA is aligned with the guidance note on coronavirus disease (COVID-19) and livable cities in Asia and the Pacific.[2]

II.   ISSUES

3.   Rajasthan is the largest state in India, with 10% of the country's land area. Rajasthan is the seventh most populous state in India and home to 69 million people (5% of the country's population), 10 million of whom are poor. Since 2005, Rajasthan has made good progress in reducing poverty supported by fast growth in services—mainly tourism—and industry. However, growth has been volatile because the traditionally strong agriculture sector is increasingly threatened by severe water shortages that are aggravated by climate change.[3] Tourism and manufacturing demonstrate potential for alternative growth to agriculture and mining driven one. Therefore, the national and state governments have created initiatives to stimulate tourism and industrial development and create jobs for migrants and local people. Tourism contributed 15% of the state economy. The 53.8 million tourists' arrivals in 2019 (including 1.6 million foreign tourists) were double the 2010 figure.[4]

4.   However, poor urban infrastructure and services have hampered the state's economic growth. Urban areas containing industry and tourism hubs occupy 25% of the state, and their continuous expansion has outpaced the state's ability to provide adequate infrastructure and quality services that meet the basic needs of residents and the demands of the growing manufacturing and service industries. Compounding these unresolved urban challenges, COVID-19 hit the Rajasthan economy hard, especially tourism. Tourist arrivals dropped by 71% to 15.5 million (including 0.4 million foreign tourists) in 2020 (footnote 4), causing millions of job losses and wiping out many micro, small, and medium-sized businesses in tourism value chains.

5.   The state government is preparing for a rapid post-COVID-19 economic recovery by revisiting pre-COVID development plans and prioritizing development and reform agendas. One such agenda is to implement and strengthen Rajasthan's strategic framework for Inclusive Revitalization of Historic Towns and Cities, promulgated in 2018 with support from the Cities Alliance, the National Institute of Urban Affairs, and the World Bank.[5] The framework emphasizes enhancing urban planning and improving basic service provision and infrastructure development while strengthening heritage management systems to optimize the economic potential of the

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[1]   ADB. 2020. *Country Operations Business Plan: India, 2021–2023*. Manila.
[2]   ADB. 2020. *COVID-19 and Livable Cities in Asia and the Pacific: Guidance Note*. Manila.
[3]   World Bank Group. 2016. *Rajasthan: Poverty, Growth & Inequality*. Washington, DC.
[4]   Government of Rajasthan, Department of Tourism. 2021. *Annual Progress Report 2020–2021*. Jaipur.
[5]   Government of Rajasthan. 2018. *Inclusive Revitalization of Historic Towns and Cities: Strategic Framework for Rajasthan State Heritage Programme*. Delhi: National Institute of Urban Affairs.

state's cultural heritage. Among the actions recommended in the framework's implementation plan is the building of an information and communication technology (ICT)-based platform to facilitate urban and investment planning for quality urban infrastructure and services that is integrated with heritage management. The state government has carried out basic social and economic data for situation analysis, but no further actions have been taken in Jodhpur, the pilot city, or Nawalgarh, the pilot town.

6.   The city of Jodhpur is located in central-west Rajasthan and has a population of about 1.2 million. Known as the "Blue City" because of the predominant indigo color of its buildings, Jodhpur retains much of its medieval character. Notable features include the famous *Ghantaghar* (clock tower) market; *baori* (stepwells), the ancient climate-resilient measures to mitigate drought; and large mansions, some of which have been converted into heritage hotels. The historic core of Jodhpur suffers from traffic congestion and lack of basic infrastructure. The absence of proper control measures on the use of heritage assets, including buildings with historical and/or architectural value threatens the city's rich heritage, including its historic markets and streetscapes.

7.   The town of Nawalgarh, located in the northeast of the state, has a population of about 100,000. Famous for its fresco and *havelis* (mansions), it is known as the "Golden City" of Rajasthan. Temples and mansions decorated with frescos are densely concentrated in the old city areas. Despite this cultural richness, Nawalgarh lacks adequate infrastructure and services. Other valuable heritage assets such as large *baori* and *johad* (ancient rainwater storage tanks) are in poor condition. Although Jodhpur and Nawalgarh differ in their level of urbanization, complexity, scale, and the condition of urban infrastructure and services, and other socioeconomic, environmental, and spatial dimensions, both areas lack holistic, systematic, and integrated urban planning. This deficiency has become a hurdle to developing adequate infrastructure and services to address basic needs and capture the full value of their rich heritage to boost the cultural economy.

8.   The TA will support operational priority 4 of ADB's Strategy 2030: making cities more livable. The three strategic pillars of this priority are to (i) improve coverage, quality, efficiency, and reliability of services in urban areas; (ii) strengthen urban planning and financial sustainability of cities; and (iii) improve urban environment, climate resilience, and disaster management of cities.[6]

III.   THE TECHNICAL ASSISTANCE

A.   Impact and Outcome

9.   The TA is aligned with the following impact: livelihoods in cultural economies of Rajasthan supported, sustained, and enhanced (footnote 5). The TA will have the following outcome: integrated and heritage-sensitive urban planning and programming established in Jodhpur and Nawalgarh. The outcome supports the state government's efforts to improve quality of life for all and unlock growth benefits by capturing the full value of cultural and historic assets.[7]

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[6] ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific.* Manila.
[7] The design and monitoring framework is in Appendix 1.

B.   Outputs, Methods, and Activities

10.   **Output 1: Information and communication technology-based urban planning mapping tools for Jodhpur and Nawalgarh developed.** Using geographic information systems and space-based technologies, the Internet of Things, and artificial intelligence, the TA will develop smart urban planning mapping tools to visualize the results of situation analyses to facilitate urban master planning and investment road maps in Jodhpur and Nawalgarh. The project will carry out the analyses, which may include the following topics: urban land use, hydrogeology for rising groundwater levels, land subsidence, flood- and drought-prone zones, transport networks, energy system bottlenecks, public services and facilities coverage, waste management, air pollution, and building controls, including heritage buildings and other heritage assets.[8] The selection of the focus areas for analyses would be determined with the consultation with city governments. The artificial intelligence function of these smart urban planning platforms will enable data updates, analyses, and simulations that can optimize adaptive urban planning and management. The platforms can be further expanded by linking and/or adding sector- and theme-based data and information to address complex issues; seek synergetic solutions; and improve open, transparent, multidirectional communication among stakeholders, including authorities, civil society organizations, and the public.[9]

11.   **Output 2: Feasibility studies for priority urban investments in Jodhpur and Nawalgarh prepared.** Based on the science- and knowledge-based urban planning supported by smart technologies, the TA will prepare feasibility studies for priority investments in Jodhpur and Nawalgarh. The selection of priority investments will consider whether measures address urgent basic needs, bring multifunctional benefits, and demonstrate transformative effects while stimulating behavior changes. Learning from the ancient climate-resilient measures, such as *baori* and *johad*, feasibility studies may include climate-resilient measures that are necessary to address water scarcity and drought but are also of cultural, aesthetic, social, and/or environmental value to revitalize the urban environment. These solutions will help Jodhpur and Nawalgarh become more sustainable, inclusive, resilient, and livable by providing clean, safe, comfortable, and pleasant living environments that all residents and visitors can enjoy. The TA will conduct scoping activities to identify and suggest concept designs of priority measures and assess financial sustainability.[10]

12.   **Output 3: Capacity of the state and urban local bodies for heritage-sensitive urban planning, development, and management strengthened**. The TA will actively engage public authorities from the state government and urban local bodies (ULBs) in Jodhpur and Nawalgarh, possibly include other stakeholders like local civil society organizations and experts, and break

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[8] Future Cities Laboratory, ETH Singapore SEC; Asian Development Bank. Bandung Smart Systems. Unpublished. Similar smart systems were developed for Bandung, Indonesia under regional technical assistance for Establishing the Future Cities Program in the Asia and Pacific Region (ADB. 2015. Establishing the Future Cities Programme in the Asia and Pacific Region).

[9] The Government of India promotes information and communication technology (ICT) application and deployment. Many states, including Rajasthan, emphasize the use of ICT to enhance e-governance and have built a state data center. The Government of Rajasthan is considered a pioneer in this area, establishing its data center in 2005 and continuing to expand ICT platform applications. In addition, several cities in Rajasthan were selected for Smart Cities Missions, a national program initiated by the Government of India to promote cities that provide core infrastructure and give their citizens a decent quality of life and a clean and sustainable environment through the application of smart solutions. Cities such as Jaipur have developed digital infrastructure solutions, including Wi-Fi, environment sensors, smart parking, and smart lighting.

[10] The priority measures identified under this TA are proposed to be implemented through additional financing for the ADB-supported Rajasthan Secondary Towns Development Sector Project (ADB. India: Rajasthan Secondary Towns Development Sector Project), which is expected to be approved in 2023.

the siloed mentality and culture to establish participatory and integrated urban planning processes. The TA will prepare and implement a capacity-building program for knowledge transfer and institutional strengthening to enhance (i) integrated and heritage-sensitive urban master planning; (ii) better use of smart urban planning tools; (iii) designing integrated multisector solutions for synergetic and transformative urban development; and (iv) institutions and governance to enable municipal resource mobilization and financial sustainability of high-quality urban assets. The TA will encourage the participation of women staff and elected representatives in such capacity building activities. To ensure the replication of high-quality urban planning, development, and management and unlock full growth potential of culturally rich cities and towns, the TA will also train other ULBs in Rajasthan. Capacity-building activities will include training, workshops and seminars, and/or site study visits.

C.   Cost and Financing

13.   The TA is estimated to cost $825,000, of which $750,000 will be financed on a grant basis by the Republic of Korea e-Asia and Knowledge Partnership Fund (EAKPF) and administered by ADB. The key expenditure items are listed in Appendix 2.

14.   The government will provide counterpart support in the form of counterpart staff, office accommodation, office supplies, secretarial assistance, data and information, and other in-kind contributions. It will not finance civil works, procurement of large-scale equipment, permanent staffing costs, or hiring of staff consultants. The TA will have an estimated climate mitigation cost of $28,000 and an adaptation cost of $35,000, which will be financed by the EAKPF.

D.   Implementation Arrangements

15.   ADB will administer the TA. The executing agency of the TA is the Government of Rajasthan acting through the Local Self Government Department and the implementing agency is the Rajasthan Urban Drinking Water Sewerage and Infrastructure Corporation Limited. A firm will be engaged using quality- and cost-based selection with a 90:10 quality–cost ratio. Individual consultants will be recruited through individual consultant selection.

16.   The implementation arrangements are summarized in the table.

Implementation Arrangements

Aspects	Arrangements		
Indicative implementation period	October 2021–October 2023		
Executing agency	The Government of Rajasthan through the Local Self Government Department		
Implementing agency	Rajasthan Urban Drinking Water Sewerage and Infrastructure Corporation Limited		
Consultants	To be selected and engaged by ADB		
	Firm: QCBS (90:10)	International smart urban planning and design firm for historic towns	$644,500
	Individual: Individual selection	International urban climate resilience and hydrogeology expert (1 person-month)	$20,000
	Individual: Individual selection	International ecosystem-based adaptation engineer (1 person-month)	$16,000

Aspects	Arrangements		
	Individual: Individual selection	National sustainable energy infrastructure expert (1 person-month)	$8,000
	Individual: Individual selection	National urban mobility infrastructure expert (1 person-month)	$8,000
	Individual: Individual selection	National urban water and sanitation expert (1 person-month)	$8,000
	Individual: Individual selection	National solid waste management expert (1 person-month)	$8,000
Advance contracting	The Government of Rajasthan requested advanced contracting for all consultants.		
Disbursement	Disbursement of TA resources will follow ADB's *Technical Assistance Disbursement Handbook* (2020, as amended from time to time).		

ADB = Asian Development Bank, QCBS = quality- and cost-based selection, TA = technical assistance.
Source: Asian Development Bank estimates.

17.   **Consulting services.** ADB will engage the consultants following the ADB Procurement Policy (2017, as amended from time to time) and its associated project administration instructions and/or staff instructions.[11]

18.   **Social media and websites.** The Rajasthan State Data Center server will host the smart urban planning mapping tools to be developed based on geographic information system mapping. The state government has committed to maintain and carry out data updates and ensure the use of the smart urban planning tools by the executing and implementing agencies and/or the project ULBs after TA completion.

19.   **Cofinancier requirements.** The TA will finance operational expenses related to eligible activities indicated in the EAKPF implementation guidelines.[12] The TA will strictly comply with the EAKPF implementation guidelines and the semiannual progress reporting requirement.

IV.   THE PRESIDENT'S DECISION

20.   The President, acting under the authority delegated by the Board, has approved the Asian Development Bank administering technical assistance not exceeding the equivalent of $750,000 to the Government of India to be financed on a grant basis by the Republic of Korea e-Asia and Knowledge Partnership Fund for Promoting Smart and Integrated Urban Planning for Livability and Cultural Economy in Rajasthan, and hereby reports this action to the Board.

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[11] Terms of Reference for Consultants (accessible from the list of linked documents in Appendix 3).
[12] ADB. The Implementation Guidelines for the Republic of Korea e-Asia and Knowledge Partnership Fund.

DESIGN AND MONITORING FRAMEWORK

Impact the TA is Aligned with
Livelihoods in cultural economies of Rajasthan supported, sustained, and enhanced. (Inclusive Revitalization of Historic Towns and Cities: Strategic Framework for Rajasthan State Heritage Programme)[a]

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
Outcome Integrated and heritage-sensitive urban planning and programming established in Jodhpur and Nawalgarh	By 2023 a. ICT-based mapping tools utilized in heritage-sensitive urban planning and development by Jodhpur and Nawalgarh[b] (2021 baseline: NA) (OP 4.2, 4.3)	a. Annual project progress reports of the Rajasthan State Heritage Programme.	R: Prolonged COVID-19 situation focuses government priorities toward coping or recovery-oriented strategies and addressing delays on other development agendas and planned investments.
Outputs 1. Information and communication technology-based urban planning mapping tools for Jodhpur and Nawalgarh developed	By 2023 1a. At least one ICT-based urban plan mapping tool for Jodhpur and Nawalgarh developed (2021 baseline: NA) (OP 4.2.1)	1a. Smart urban planning consultant reports	R: Stricter travel restrictions because of persistent COVID-19 affect the quality of consultant fieldwork. R: Staff reductions and reorientation of work toward COVID-19 responses delay data collection from government bureaus and ULBs.
2. Feasibility studies for priority urban investments in Jodhpur and Nawalgarh prepared	2a. A feasibility study for priority intervention(s) in Jodhpur prepared (2021 baseline: NA) 2b. A feasibility study for priority intervention(s) in Nawalgarh prepared (2021 baseline: NA)	2a–b. Draft detailed project reports for investment projects	
3. Capacity of the state and urban local bodies for heritage-sensitive urban planning, development, and management strengthened	3a. At least 70 staff and elected representatives of ULBs, including at least 80% of eligible women staff and elected women representatives, report increased knowledge on integrated, heritage-sensitive, resilient, and inclusive urban planning, development, and management (2021 baseline: NA) (OP 2.3.1, 3.1.2, 6.1.1.). 3b. At least 100 staff from the state government and Jodhpur and Nawalgarh ULBs, including at least 80%	3a–b. Pre-and post-training tests	

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
	of eligible women staff, report increased technical knowledge on operating and maintaining smart urban planning mapping tools (2021 baseline: NA) (OP 2.3.1, 6.1.1).		

Key Activities with Milestones
1. **Information and communication technology-based urban planning mapping tools for Jodhpur and Nawalgarh developed.**
1.1 Complete data and information collection for urban plan preparation at Jodhpur and Nawalgarh (November 2021–March 2022).
1.2 Develop smart urban planning mapping tools for Jodhpur and Nawalgarh and conduct test run of smart urban planning mapping tools (January–June 2022).
1.3 Develop and endorse investment road maps for Jodhpur and Nawalgarh (March–July 2022).
2. **Feasibility studies for priority urban investments in Jodhpur and Nawalgarh prepared.**
2.1 Select priority solutions for investment in Jodhpur and Nawalgarh (June–August 2022).
2.2 Assess and prioritize selected solutions for Jodhpur and Nawalgarh (August–September 2022).
2.3 Develop feasibility studies on priority investment measures, including concept designs of these measures (September 2022–June 2023).
3. **Capacity of the state and urban local bodies for heritage-sensitive urban planning, development, and management strengthened.**
3.1 Prepare capacity-building program (January–March 2022).
3.2 Prepare training materials and pre- and post-training survey questionnaires (February–December 2022).
3.3 Implement training and capacity-building activities and prepare evaluation reports (June 2022–June 2023).

TA Management Activities
Recruit consultants and finalize TA work plan.
Establish TA steering committee and implementation committees at Jodhpur and Nawalgarh.
Prepare list of data and information categories and items built and prepare questionnaires.
Assess smart city infrastructure and systems in Rajasthan.
Conduct surveys for baseline data and information collection.

Inputs
Republic of Korea e-Asia and Knowledge Partnership Fund: $750,000
Note: The government will provide counterpart support in the form of counterpart staff, office accommodation, office supplies, secretarial assistance, data and information, and other in-kind contributions.

ADB = Asian Development Bank, COVID-19 = coronavirus disease, ICT = information and communication technology NA = not applicable, OP = operational priority, TA = technical assistance, ULB = urban local body.
a Government of Rajasthan. 2018. *Inclusive Revitalization of Historic Towns and Cities: Strategic Framework for Rajasthan State Heritage Programme*. Delhi.
b Utilization refers to (i) updating data in the developed ICT-based urban plan mapping tools, and (ii) regular use of the mapping tools to revise or modify urban planning in response to changes in conditions.
Contribution to Strategy 2030 Operational Priorities:
The expected values and methodological details for all OP indicators to which this TA will contribute results will be detailed in the Contribution to Strategy 2030 Operational Priorities (accessible from the list of linked documents in Appendix 3).
Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN
($'000)

Item	Amount
Republic of Korea e-Asia and Knowledge Partnership Fund[a]	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	330.0
ii. National consultants	169.0
b. Out-of-pocket expenditures	
i. International and local travel	120.0
ii. Reports and communications	5.0
2. Surveys	20.0
3. Training, seminars, and conferences[b]	68.5
4. Contingencies	37.5
Total	**750.0**

Note: The technical assistance (TA) is estimated to cost $825,000, of which contributions from the Republic of Korea e-Asia and Knowledge Partnership Fund are presented in the table. The Government of Rajasthan will provide counterpart support in the form of counterpart staff, office accommodation, workshop and training facilities, and project related data and information, and other in-kind contributions. The value of the government contribution is estimated to account for 15% of the total TA cost.

[a] Administered by the Asian Development Bank

[b] Includes site visits as part of capacity-building activities. It will also cover travel cost of an Asian Development Bank staff member acting as a resource person.

Source: Asian Development Bank estimates.

LIST OF LINKED DOCUMENTS
http://www.adb.org/Documents/LinkedDocs/?id=42267-032-TAReport

1.   Terms of Reference for Consultants
2.   Contribution to Strategy 2030 Operational Priorities