



Technical Assistance Report

Project Number: 52251-001
Knowledge and Support Technical Assistance (KSTA)
March 2020

Building Disaster-Resilient Infrastructure through Enhanced Knowledge

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Asian Development Bank

ABBREVIATIONS

ADB	–	Asian Development Bank
DMC	–	developing member country
MDB	–	multilateral development bank
PDNA	–	post-disaster needs assessment
SDCC	–	Sustainable Development and Climate Change Department
SDG	–	Sustainable Development Goal
TA	–	technical assistance
UN	–	United Nations
UNDP	–	United Nations Development Programme

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: 52251-001	
Project Name	Building Disaster-Resilient Infrastructure through Enhanced Knowledge	Department/Division	SDCC/SDCD
Nature of Activity	Capacity Development	Executing Agency	Asian Development Bank
Modality	Regular		
Country	REG (ARM, CAM, FIJ, SRI)		
2. Sector		Subsector(s)	
		ADB Financing (\$ million)	
		Total	0.00
3. Operational Priorities		Climate Change Information	
✓ Addressing remaining poverty and reducing inequalities		Climate Change impact on the Project	Low
✓ Accelerating progress in gender equality			
✓ Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability		Cofinancing	
✓ Strengthening governance and institutional capacity		Adaptation (\$ million)	0.67
Sustainable Development Goals		Gender Equity and Mainstreaming	
SDG 10.4		Some gender elements (SGE)	✓
SDG 11.5, 11.b			
SDG 13.a		Poverty Targeting	
		General Intervention on Poverty	✓
4. Risk Categorization		Complex	
5. Safeguard Categorization Safeguard Policy Statement does not apply			
6. Financing			
Modality and Sources		Amount (\$ million)	
ADB		0.00	
None		0.00	
Cofinancing		2.00	
Japan Fund for Poverty Reduction (Full ADB Administration)		2.00	
Counterpart		0.00	
None		0.00	
Total		2.00	
Currency of ADB Financing: US Dollar			

I. INTRODUCTION

1. The knowledge and support technical assistance (TA) will strengthen action-oriented disaster risk management knowledge for disaster-resilient infrastructure in developing member countries (DMCs) of the Asian Development Bank (ADB) through (i) developing upstream disaster-resilient infrastructure know-how; (ii) reviewing existing infrastructure investment design processes at the preparatory phase in selected DMCs; and (iii) building the capacity of selected DMCs to incorporate disaster-resilient measures in post-disaster reconstruction processes and documenting the measures for the benefit of all DMCs.¹

2. The TA is included in the 2019 and 2020 management-approved results-based work plan of the Sustainable Development and Climate Change Department (SDCC).² It supports the implementation of (i) ADB's Strategy 2030 on tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability and (ii) ADB's Operational Plan for Integrated Disaster Risk Management, 2014–2020.³ The TA responds to individual country partnership strategies to enhance disaster resilience. The TA will help DMCs attain disaster resilience ambitions under the Sustainable Development Goals (SDGs), the Sendai Framework for Disaster Risk Reduction 2015–2030, and the 2015 Paris Agreement on Climate Change.⁴

II. ISSUES

3. Disasters triggered by natural hazards threaten the long-term sustainability of development in Asia and the Pacific. DMCs face significant disaster and climate risk. Between 2008 and 2017 alone, extreme weather events and geophysical hazards caused direct physical losses averaging \$46 billion per year—or \$134 million per day. Losses included damage to infrastructure, homes, and businesses, with indirect economic and social consequences for jobs, productivity, and the provision of services. The failure of insufficiently resilient infrastructure also contributed to more than 317,000 disaster-related fatalities over the same period.⁵

4. Escalating disaster losses emphasize the urgent need for DMCs to adequately address disaster risk in planning and designing infrastructure. This issue is particularly urgent because of the region's huge infrastructure investment needs over the next 20 years, combined with climate change's expected adverse impacts on the frequency and intensity of extreme weather events. Developing Asia will need to invest \$26 trillion in infrastructure between 2016 and 2030, or \$1.7 trillion per year, to maintain its growth momentum, eradicate poverty, and respond to climate change.⁶

5. The barriers to sustainable and resilient infrastructure go beyond finance. Challenges include how and where infrastructure is built, the appropriateness and application of infrastructure standards, incentive structures, maintenance, and land-use planning. Risk-informed projects and

¹ "Knowledge" refers to the theoretical or practical understanding (the product of organization and reasoning applied to raw data). "Know-how" refers to tacit knowledge (developed through a process of interaction, debate, and trial and error encountered in practice). ADB. 2004. *Knowledge Management in ADB*. Manila.

² The TA first appeared in the business opportunities section of ADB's website on 12 September 2019.

³ ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila; and ADB. 2014. *Operational Plan for Integrated Disaster Risk Management, 2014–2020*. Manila.

⁴ United Nations. 2015. *Transforming Our World: The 2030 Agenda for Sustainable Development*. New York; United Nations. 2015. *Sendai Framework for Disaster Risk Reduction*. New York; and United Nations. 2015. *Paris Agreement*. New York.

⁵ Centre for Research on the Epidemiology of Disasters (CRED). The Emergency Events Database (EM-DAT). www.emdat.be (accessed 29 January 2019).

⁶ ADB. 2017. *Meeting Asia's Infrastructure Needs*. Manila.

regulatory frameworks are needed. The interface between sector-level approaches to managing disaster risk continues to challenge a coherent, coordinated development-wide treatment of risk.

6. Post-disaster recovery and reconstruction is a complex process. The number of stakeholders, and the demands from affected businesses and communities to quickly return to pre-disaster state, can override the opportunity a disaster presents to address underlying risk factors. Pre-disaster recovery planning enables DMCs to address difficult and time-consuming decisions and strengthen the capacity of decision-makers before an event. Laying the foundations for the principles to “build back better” ahead of time can result in a more equitable and sustainable recovery that avoids regenerating disaster risk.⁷

7. Recognizing the necessity for greater investment in disaster-resilient infrastructure across Asia and the Pacific, ADB member countries are spearheading important initiatives. These include the G20 Quality Infrastructure Investment Initiative and the Coalition for Disaster Resilient Infrastructure under India’s leadership. The international community’s commitment to SDG 9 (to “build resilient infrastructure, promote sustainable industrialization and foster innovation”) and global target (d) of the Sendai Framework for Disaster Risk Reduction (to “substantially reduce disaster damage to critical infrastructure and disruption of basic services”) also requires generating context-specific knowledge and emphasizing its practical application in new investments, including in post-disaster reconstruction.

8. Led by multilateral development banks (MDBs), a global infrastructure forum identifies and addresses infrastructure and capacity gaps to support the commitment to investing in sustainable and resilient infrastructure under the Addis Ababa Action Agenda.⁸ To support this initiative, proven approaches and concrete examples from DMCs offer the opportunity to demonstrate best practice and to highlight where additional capacity and technical support is required.

9. The TA will select a DMC from each of Central and West Asia, Pacific, South Asia, and Southeast Asia Departments to benefit from country-level engagement. Provisionally, the TA identified Armenia, Cambodia, Fiji, and Sri Lanka, because disaster risk management, including enhancing disaster recovery, is a focus and priority area for engagement in these countries.⁹ The TA will base final selection on the following criteria, taking into account the practicality of implementing the TA and the resources available: (i) the existing infrastructure investment environment, (ii) high-levels of disaster risk, (iii) the portfolio and/or pipeline of ADB projects related to disaster risk management, and (iv) demonstrated willingness to engage in ADB-supported capacity-building initiatives. The TA will also consider geographical balance and avoid overlap with support provided by other development partners.

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

10. The TA is aligned with the following impact: disaster-resilient infrastructure promoted in Asia and the Pacific.¹⁰ The TA will have the following outcome: action-oriented disaster risk

⁷ W. J. Clinton. 2006. *Key Propositions for Building Back Better*. New York: United Nations.

⁸ United Nations. 2015. *Addis Ababa Action Agenda of the Third International Conference on Financing for Development*. New York.

⁹ Indicative selection pending confirmation from ADB’s operations departments and DMCs.

¹⁰ United Nations. 2015. *Sendai Framework for Disaster Risk Reduction*. New York.

management policies and processes on infrastructure investment planning and design, post-disaster reconstruction policies, and upstream enabling environments in DMCs improved.¹¹

B. Outputs, Methods, and Activities

11. **Output 1: Disaster-resilient infrastructure know-how disseminated.** The TA will develop knowledge products to advance upstream disaster-resilient infrastructure know-how, including linkages to the proposed Coalition for Disaster Resilient Infrastructure spearheaded by the Government of India and the Sendai Framework for Disaster Risk Reduction's global target to "substantially reduce disaster damage to critical infrastructure and disruption of basic services." Appropriate upstream enabling environments include disaster-resilient infrastructure standards and codes, risk-informed land use management, disaster risk screening and assessment tools, disaster-resilient building skills and capabilities, and regulatory processes. The TA will draw on ongoing ADB initiatives related to climate-resilient investments in critical infrastructure.¹²

12. The TA will help inform the discourse on disaster-resilient infrastructure through a publication on Asia and the Pacific's "state of play" on disaster-resilient infrastructure. The publication will (i) build on ADB's Meeting Asia's Infrastructure Needs report (footnote 6), recent studies supported by ADB on infrastructure climate hazard exposure, and other literature; (ii) assess achievement towards relevant SDGs and Sendai Framework for Disaster Risk Reduction targets; and (iii) identify trends for policy makers in Asia and Pacific to consider in the context of building disaster-resilient infrastructure. Additional knowledge products, including a study on how MDBs address disaster risk in their lending processes, will target practitioners based on identified gaps in response to upstream initiatives. To ensure maximum coverage, the TA will disseminate products at high-level regional and international forums, such as annual meetings of MDBs and United Nations (UN) conferences related to resilient infrastructure and sustainable development. The TA will publish and widely disseminate the report digitally and make about 300 printed copies available at the high-level launch of the publication.

13. **Output 2: Recommendations for addressing disaster risk in infrastructure investment processes identified.** The TA will review (i) existing government processes (and associated guidelines and tools) for selecting, appraising, and designing infrastructure projects in four DMCs and (ii) opportunities to better integrate disaster risk considerations. The reviews will document existing processes, their treatment of disaster risk and implications for investment portfolios and project design, associated gaps and challenges, and recommendations for improvement within priority sectors identified by the DMCs. The completed reviews will provide a bank of case examples of practical actions and recommendations for DMCs to integrate disaster risk considerations in infrastructure project development processes.

14. The TA will provide the response to the recommendations in the country reviews, technical advisory services, and capacity building to four DMCs. Areas of assistance are expected to include revising urban building codes, developing investment plans, and revising legal and regulatory acts. The TA will make about 200 copies available per DMC for the national launch of the country reviews.

15. **Output 3: Resilient recovery capacity enhanced.** The TA will strengthen capacity in four DMCs to ensure that appropriate disaster-resilient measures are incorporated into post-

¹¹ The design and monitoring framework is in Appendix 1.

¹² ADB. 2016. *Building Climate Resilience in Asia's Critical Infrastructure*. Manila; and ADB. 2017. *Supporting Adaptation Decision Making for Climate-Resilient Investments*. Manila.

disaster reconstruction efforts by supporting post-disaster needs assessment (PDNA) training to government officials, focusing on infrastructure-related sectors, the utilization of contingency and recovery tools and plans, improved financial preparedness planning to help cover the additional costs of building back better, and effective post-disaster budget execution capabilities.¹³

16. The TA will help develop comprehensive country-specific post-disaster recovery plans, based on detailed consultations and a needs assessment to ensure that the support builds on existing efforts and is well coordinated. The TA will also contribute to the efforts of development partners by designing and publishing PDNA learning materials (such as guidance notes, simulation exercises, or tools) in the context of Asia and the Pacific. ADB will work closely with the International Recovery Platform to ensure that contributions under this output build on efforts by other stakeholders.¹⁴

C. Cost and Financing

17. The TA is estimated to cost \$2,000,000, which will be financed on a grant basis by the Japan Fund for Poverty Reduction and administered by ADB. The key expenditure items are listed in Appendix 2.

18. The following are ineligible items under the Japan Fund for Poverty Reduction: (i) purchase of vehicles, (ii) salaries for civil servants, (iii) foreign travel,¹⁵ (iv) scholarships or long internships, (v) detailed engineering design, (vi) civil works and other related expenses, and (vii) those under ADB's List of Ineligible Items (or Negative List) and Prohibited Investment Activities List.

D. Implementation Arrangements

19. ADB will administer the TA. The Climate Change and Disaster Risk Management Division of SDCC will implement the TA in close coordination with relevant sector divisions of ADB's operations department, including sector and thematic groups as appropriate. SDCC will select, supervise, and evaluate consultants; organize workshops; and provide staff to act as resource persons in the workshop.

20. The implementation arrangements are summarized in the table.

Implementation Arrangements			
Aspects	Arrangements		
Indicative implementation period	March 2020–February 2022		
Executing agency	ADB		
Implementing agencies	Sustainable Development and Climate Change Department		
Consultants	To be selected and engaged by ADB		
	Quality- and cost-based selection (90:10)	Package 1 (21 person-months)	\$1,032,445

¹³ PDNA is an internationally accepted methodology for determining the physical damages, economic losses, and costs of meeting recovery needs after a disaster triggered by a natural hazard through a government-led process.

¹⁴ The International Recovery Platform, comprising organizations from the region and globally, exchanges lessons and ideas that promote recovery best practice and learnings, as well as capacity building on build back better in recovery, rehabilitation, and reconstruction. ADB is a member of the steering committee.

¹⁵ Foreign travel is ineligible "except in the case of TAs where participation of recipient countries, including civil servants, in international workshops, conferences, mentoring visits, or study tours is fully justified in the original proposal with detailed description, objectives and budget, and approved by the Government of Japan." Refer to the Japan Fund for Poverty Reduction 2018 Policy Guidelines for Technical Assistance Grant.

Aspects	Arrangements		
		and Package 2 (30 person-months)	
	Single-source selection	UNDP (36 person-months)	\$543,207
	Individual selection	1 national (18 person-months)	\$60,048
Procurement	Procurement (for workshops, training, seminars, and conferences) will follow ADB's Procurement Policy (2017, as amended from time to time).		
Disbursement	The TA resources will be disbursed following ADB's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time).		

ADB = Asian Development Bank, TA = technical assistance, UNDP = United Nations Development Programme.
Source: Asian Development Bank.

21. **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.¹⁶ ADB will use quality- and cost-based selection (90:10) to select consultants for packages 1 and 2, and engage the United Nations Development Programme (UNDP) through single-source selection to deliver output 3. As a UN agency specializing in disaster recovery, UNDP coordinates PDNAs on behalf of the UN system and has a proven track record in developing common tools and building government capacity in disaster recovery. In addition, UNDP can leverage its existing footprint in the four DMCs to ensure implementation efficiency, well-coordinated activities, and output sustainability. UNDP's engagement is in line with the agreed areas of collaboration and forms of cooperation set out in the memorandum of understanding between UNDP and ADB.¹⁷

22. **ADB's procurement.** Procurement will follow the ADB Procurement Policy and Procurement Regulations for ADB Borrowers (2017, as amended from time to time).

IV. THE PRESIDENT'S DECISION

23. The President, acting under the authority delegated by the Board, has approved the Asian Development Bank administering technical assistance not exceeding the equivalent of \$2,000,000 to be financed on a grant basis by the Japan Fund for Poverty Reduction for Building Disaster-Resilient Infrastructure through Enhanced Knowledge, and hereby reports this action to the Board.

¹⁶ Terms of reference for consultants (accessible from the list of linked documents in Appendix 3).

¹⁷ Memorandum of Understanding between the United Nations Development Programme and the Asian Development Bank dated 13 April 2019.

DESIGN AND MONITORING FRAMEWORK

Impact the TA is Aligned with Disaster-resilient infrastructure promoted in Asia and the Pacific (Sendai Framework for Disaster Risk Reduction) ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Action-oriented disaster risk management policies and processes on infrastructure investment planning and design, post-disaster reconstruction policies, and upstream enabling environments in DMCs improved	a. By 2022, policy or process revisions to enhance integration of disaster risk considerations initiated in 4 DMCs (2019 baseline: 0)	a. Draft policy documents and Sendai Framework Monitor reports	Government commitment to disaster-resilient infrastructure not secured or sustained
Outputs 1. Disaster-resilient infrastructure know-how disseminated 2. Recommendations for addressing disaster risk in infrastructure investment processes identified	1a. By 2022, at least four knowledge products to advance upstream disaster-resilient infrastructure know-how published and disseminated (2019 baseline: 0) 2a. By 2022, existing sector processes for selection, appraisal, and design of infrastructure projects reviewed in at least 4 DMCs (2019 baseline: 0) 2b. By 2022, four DMC case studies on actions, lessons, and recommendations adopted to integrate disaster risk considerations in infrastructure project design published and disseminated (2019 baseline: 0)	1a. Published knowledge products 2a. Country review reports 2b. Published knowledge products	Delays in upstream disaster-resilient infrastructure initiatives Insufficient commitment from counterparts because of competing priorities

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
3. Resilient recovery capacity enhanced	<p>3a. By 2022, at least 80% of 240 PDNA training participants (with at least 50% female participation) from 4 DMCs reported improved knowledge on disaster-resilient measures in post-disaster reconstruction process (2019 baseline: None)</p> <p>3b. By 2022, three contingency and recovery tools/plans published and disseminated (2019 baseline: 0)</p>	<p>3a. Post-training evaluation; PDNA training final report by consultants</p> <p>3b. TA final report; contingency and recovery tools/plans</p>	
Key Activities with Milestones <p>1. Disaster-resilient infrastructure know-how disseminated</p> <p>1.1 Based on consultations, develop responsive knowledge products (including case studies, tool kits, and guidance notes) to advance upstream initiatives (Q1 2020–Q4 2021).</p> <p>2. Recommendations for addressing disaster risk in infrastructure investment processes identified</p> <p>2.1 Review investment processes addressing disaster risk in DMCs (Q1 2020–Q2 2021).</p> <p>2.2 Support national-level consultation and validation workshops (Q4 2020–Q4 2021).</p> <p>2.3 Produce a report with examples, actions, lessons, and recommendations (Q4 2021).</p> <p>3. Resilient recovery capacity enhanced</p> <p>3.1 Provide support to strengthen capacity to integrate disaster-resilient measures into post-disaster reconstruction efforts in participating DMCs (Q1 2020–Q3 2021).</p> <p>3.2 Provide direct support to develop and use contingency and recovery tools and support planning in participating DMCs (Q1 2020–Q3 2021).</p> <p>TA Management Activities</p> <p>Manage consultant contracts (Q1 2020–Q1 2022).</p> <p>Report and supervise regularly until Q1 2022.</p> <p>Prepare final report until Q1 2022.</p>			
Input <p>Japan Fund for Poverty Reduction: \$2,000,000</p>			
Assumptions for Partner Financing <p>Not Applicable</p>			

DMC = developing member country, PDNA = post-disaster needs assessment, Q = quarter, TA = technical assistance.

^a United Nations. 2015. *Sendai Framework for Disaster Risk Reduction*. New York.

Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN

(\$'000)

Item	Amount
Japan Fund for Poverty Reduction^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	1,176.50
ii. National consultants	281.40
b. Out-of-pocket expenditures	
i. International and local travel	163.80
ii. Reports and communications	14.00
2. Printed external publications ^b	64.00
3. Training, seminars, workshops, forum, and conferences	
a. Facilitators	10.00
b. Travel cost of Asian Development Bank staff acting as a resource person	50.00
c. Venue rental and related facilities	56.00
d. Participants	20.00
e. Representation ^c	5.00
4. Miscellaneous administration and support costs ^d	64.30
5. Contingencies	95.00
Total	2,000.00

Note: The technical assistance is estimated to cost \$2,000,000, of which contributions from the Japan Fund for Poverty Reduction are presented in the table.

^a Administered by the Asian Development Bank (ADB).

^b Printed copies will be made available during the publication launches. Under output 1, an estimated 300 copies will be needed for the high-level launch of the publication on disaster-resilient infrastructure know-how. Output 2 will require a total of 800 copies, 200 copies for each of the four project countries, for the national launch of the country reviews.

^c Representation expense to include minimal alcoholic beverages during major workshops and conferences. ADB. (Budget, Personnel and Management Systems Department and Strategy and Policy Department). 2013. Memorandum on the Use of Bank Resources: Regional Technical Assistance and Technical Assistance vs. Internal Administrative Expenses Budget. 26 June (internal).

^d Includes the United Nations Development Programme general management support costs as described in ADB and United Nations Development Programme Memorandum of Understanding for Administrative Arrangements; payments to service providers and contractors, shipping, moving, logistics, and other related services; and other administrative support, including ADB staff travel when providing support services in the preparatory works, implementation, and administration of technical assistance events and activities (travel and related costs for secretarial and administrative services).

Source: Asian Development Bank estimates.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/LinkedDocs/?id=52251-001-TARreport>

1. Terms of Reference for Consultants