



# Completion Report

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Project Number: 48488-001  
Technical Assistance Number: 8961  
May 2021

## Strengthening Climate and Disaster Resilience of Investments in the Pacific

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## TECHNICAL ASSISTANCE COMPLETION REPORT

<b>TA Number, Country, and Name:</b> TA 8961-REG: Strengthening Climate and Disaster Resilience of Investments in the Pacific		<b>Amount Approved:</b> \$1,000,000.00	
		<b>Revised Amount:</b> \$3,550,000.00	
<b>Executing Agency:</b> Asian Development Bank	<b>Sources of Funding:</b> Technical Assistance Special Fund: \$1,000,000.00 (TASF-V) \$1,300,000.00 (TASF-VI) \$500,000.00 (TASF-Other sources) Climate Change Fund: \$750,000.00	<b>Amount Undisbursed:</b> \$381,631.17	<b>Amount Used:</b> \$3,168,368.83
<b>TA Approval Date:</b> 18 September 2015	<b>TA Signing Date:</b> 18 September 2015	<b>TA Completion Date</b>	
		<b>Original Date:</b> 21 December 2018	<b>Latest Revised Date:</b> 31 December 2020
		<b>Financial Closing Date:</b> 19 March 2021	<b>Number of Extensions:</b> 1
<b>TA Type:</b> Capacity development TA	<b>Nature of Activity:</b> Capacity development, Policy advice, Knowledge partnerships	<b>TA Arrangement:</b> Regional	

### Description

The Pacific developing member countries (DMCs) are exposed to a wide range of worsening climate-related hazards, such as tropical cyclones, floods, droughts, storm surges, and sea level rise. The region also faces geophysical hazards, such as volcanic eruptions and earthquakes. Their small size, isolation, narrow economic bases, limited resources, and dependence on trade make the Pacific DMCs highly vulnerable to these hazards. Pacific DMCs are small island developing states, and seven are classified as fragile and conflict-affected situations. The technical assistance (TA) was implemented to assist the Pacific DMCs in addressing climate and disaster risks.<sup>1</sup> The TA collaborated with project teams in the Asian Development Bank's (ADB) Pacific Department (PARD) to support Pacific DMCs in a number of ways, including conducting climate change profiles and risk assessments; reviewing draft climate change documents prepared by project investment consultants; preparing climate change funding proposals; and building capacity of DMCs through the preparation of guidance notes, workshops, and training.

### Expected Impact, Outcome, and Outputs

The expected impact was strengthened integrated risk management to enhance the climate and disaster resilience of Pacific DMCs. The intended outcome was increased climate and disaster resilience of investments in the Pacific DMCs. The TA targeted four outputs: (i) climate change and disaster risk management incorporated into investments in the Pacific; (ii) capacity to integrate climate and disaster risk management in government planning processes strengthened throughout the region; (iii) access to climate change financing supported in selected countries; and (iv) Pacific DMCs' capacity to negotiate climate change agreements and financing strengthened (this output was added through a minor change in the TA scope). The design and monitoring framework is in Appendix 1.

### Implementation Arrangements

ADB, through PARD, was the executing agency of the TA. ADB's Sustainable Development and Climate Change Department (SDCC) provided guidance and technical support. There had been a succession of three project officers during project implementation, but this did not disrupt the performance of the TA, even as demand for the TA's assistance grew. Against the planned 50 and 35 person-months of inputs from international and national consultants, respectively, the TA utilized 158.27 person-months of inputs (99.77 international person-months and 58.50 national person-months) from 21 individual consultants and 6 resource persons.

The TA's original implementation period was from 18 September 2015 to 21 December 2018, with funding of \$1.00 million from the Technical Assistance Special Fund (TASF). In response to the increasing demand for TA inputs, mainly climate risk assessments and assistance in accessing climate change financing, the amount of the TA was increased three times and the completion date was extended once, as follows: (i) 2017—\$1.00 million (from TASF) to finance ADB's support to Fiji Government's Presidency for the 23rd session of the Conference of the Parties to the UN Framework Convention on Climate Change (this was when Output 4 was added); (ii) 2018—\$1.25 million (\$0.50 million from TASF, \$0.75 million

<sup>1</sup> ADB. 2015. *Technical Assistance for Strengthening Climate and Disaster Resilience of Investments in the Pacific*. Manila.

from Climate Change Fund) to support the implementation of TA activities to 2020. TA extension to 31 December 2020 was approved for a total of 63.50 months implementation period; and (iii) 2019—\$0.70 million (from TASF) to provide for expanded TA outputs. Project targets were increased proportionately with the additional funding.

These funding increases brought the cumulative TA funding to \$3.95 million. In April 2020, \$0.40 million was canceled because some planned activities and all 2020 mission travels did not push through due to the coronavirus disease (COVID-19) pandemic travel ban. This left a balance of \$3.55 million in total funding. The TA was almost fully committed, with only around \$138,000.00 uncommitted amount (balance as of 31 December 2020). A further \$381,631.17 was canceled after closing the consultants' contracts and on TA financial closing because of unrealized activities and mission travels in 2020. Details of the TA cost are in Appendix 3.

### Conduct of Activities

This section summarizes the TA achievements against the output-level targets. Details are in Appendix 2, including achievements that did not contribute directly to the targets but brought about positive results.

**Output 1: Climate change and disaster risk management incorporated into investments in the Pacific.** Target: At least 15 new investments in the Pacific supported through climate change assessments, incorporation of climate-proofing options with gender considerations (the original target in the 2015 TA report was five). The TA developed 34 disaster or climate change assessments for 23 Pacific investment projects, far surpassing the target. These assessments took different forms, including 13 climate risk assessments (CRAs); 10 shorter climate change assessments that are required as a linked document (these are often a summary of the CRA); 6 detailed location-specific climate projections pertinent to project designs (these were often used in the CRAs); and 5 other types of assessments. In addition, the TA provided extensive support that is not captured by the Output 1 target. This support included providing substantive input into the planning, preparation and review/finalization of an estimated 20 CRAs (in addition to the 13 developed by the TA); completing 11 Aware for Projects (AWARE) reports, a climate risk screening tool that helps determine if a CRA is required; contributing to SDCC documents and workshops focused on improving climate risk assessments; providing input into the scope of work for a comprehensive multi-hazard risk assessment for Tongatapu, Tonga undertaken through TA 9464-REG: Pacific Disaster Resilience Program;<sup>2</sup> and developing two gender and climate change assessments for climate finance proposals.

**Output 2: Capacity to integrate climate and disaster risk management in government planning processes strengthened throughout the region.** Target: At least four new regional knowledge products, studies, or tools produced on climate and disaster risk management and the systematic approach to achieve strategic climate resilience in the Pacific, including gender considerations (the original target was two). The TA produced eight studies/knowledge products, doubling the target. These included five reports on topics such as sea level rise, coral reef insurance, and post-disaster budget execution; a brochure on PARD's climate change program; a tip sheet on gender-transformative approaches to building climate resilience; and a video showcasing climate resilient power infrastructure in Tonga. The TA also reviewed and provided comments on several other knowledge products (completed by other partners or through other TA projects); developed a range of briefing notes, presentations, and talking points for PARD management; created and maintained an online database of climate change information; and helped organize three "Pacific Talk" sessions (two internal to ADB and one attended by delegates from Pacific DMCs) on topics related to climate change.

**Output 3: Access to climate change financing supported in selected countries.** First target: At least 13 investment projects have submitted new cofinancing proposals for Green Climate Fund (GCF) or other climate financing resources (the original target was five). Second target: At least four new country-level or regional road maps and/or project pipelines developed for investments in climate change and disaster risk management (the original target was three). The TA helped develop 18 proposals/applications for 16 projects, surpassing the first target for this output. Proposals were submitted to five climate financing sources totaling \$150.55 million, as follows: GCF (4 proposals worth \$75.50 million); Global Environment Facility (4 worth \$17.50 million); Ireland Trust Fund for Building Climate Change and Disaster Resilience in Small Island Developing States (3 worth \$2.40 million); Asian Development Fund for Disaster Risk Reduction (6 worth \$54.40 million); and Climate Change Fund (1 worth \$0.75 million). The TA also surpassed its second target for this output by developing seven new country-level or regional road maps and/or project pipelines.

**Output 4: Capacity building of Pacific DMCs in negotiating climate change agreements and financing.** Target: Support given to at least four climate change events or workshops at the regional or international level with focus on Pacific DMCs (the original target was two). The TA supported 5 events (2 regional and 3 international) where Pacific DMCs' climate change concerns were the focus of discussions. These included \$1.00 million to support Fiji in presiding over the 23rd Session of the Conference of the Parties to the UN Convention on Climate Change (COP 23). The TA also supported the Second Atoll Adaptation High Level-Dialogue, the Coalition of Atoll Nations against Climate Change at the 2019 COP meeting, and a training course on adaptation pathways for small island developing states.

<sup>2</sup> ADB. 2017. *Technical Assistance for Pacific Disaster Resilience Program*. Manila.

### Technical Assistance Assessment Ratings

Criterion	Assessment	Rating
Relevance	The TA was highly relevant. Pacific DMCs are exposed and highly vulnerable to climate and geophysical hazards, and climate-related risks are worsening due to climate change. Working through ADB investment projects, the TA was designed to help DMCs address these risks in support of their national adaptation and mitigation priorities. The TA was also consistent with country partnership strategies and ADB's Pacific Approach and provided key support to ensure that PARD could address the third operational priority of ADB Strategy 2030 (Tackling climate change and building climate and disaster resilience). <sup>3</sup>	Highly relevant
Effectiveness	The TA met its expected outcome to increase climate and disaster resilience of investments in the Pacific DMCs. It also surpassed all of its output-level target indicators, while providing additional support not covered by the targets. The effectiveness of the TA against the planned outputs is clearly shown in the section on summary of TA achievements.	Highly effective
Efficiency	Over a 63.5-month implementation period, the TA utilized 158.27 person-months of inputs from individual consultants (99.77 international experts and 58.50 national experts). The significant utilization of consultant inputs reflected the high demand for TA support. A TA extension was granted (with an increase in TA funding) because of this high demand, not because of any delays in implementation. There were remaining funds only because some activities slowed down or were cancelled due to the COVID-19 pandemic. Nevertheless, output-level targets were still achieved (and exceeded). Another measure of efficiency is the amount of climate finance that the TA helped secure (\$150.55 million) compared to the consultant inputs required to complete the necessary applications/proposals (estimated at about \$1.20 million). Thus, for every dollar spent in consultant inputs under Output 3, the TA helped PARD secure over \$125.00 in climate finance.	Efficient
Overall Assessment	The TA was highly relevant, highly effective and efficient. With inputs linked closely to PARD's investment projects, the TA helped provide necessary climate risk assessments so that projects could be properly climate-proofed and also facilitated securing over \$150.00 million in climate change finance, thus helping PARD contribute to ADB's climate finance goals.	Highly successful
Sustainability	Recognizing the Pacific DMCs need to address their vulnerability to climate change and disaster risks, follow-on TA 6683-REG: Support to Climate Resilient Investment Pathways in the Pacific was approved by ADB Management in December 2020. <sup>4</sup> As discussed in the next section under "Replication and/or scaling up," this new TA will build on the significant progress made under TA 8961-REG.	Most likely sustainable

### Lessons Learned and Recommendations

Design and/or planning	The design of the TA clearly addressed key areas where ADB project teams required assistance. It should be noted that the TA was designed to interact with ADB project officers and teams, with the assistance linked to ADB investment projects. The TA benefited the Pacific DMCs although did not initially engage directly with stakeholders in these countries, but only through the PARD infrastructure project teams. As discussed under "Stakeholder participation," the TA increased its engagement with the stakeholders over its final 2 years.
Implementation and/or delivery	To strengthen climate risk management in its investments, ADB began requiring CRAs in 2015. Since the requirement was still new when the TA started, the TA was not always engaged in projects early enough to improve the quality of CRAs and to influence project designs (e.g., identify appropriate adaptation measures). Especially in the first 2 years of TA implementation, this was a common issue when project officers were seeking climate finance for their projects. Projects were largely already designed when the TA was brought in to help secure climate finance. In some cases, this did not work well, as project designs did not always have a strong "climate change rationale." Engagement with project teams and PARD's front office improved over time. As project officers began to better understand CRA requirements and the valuable inputs offered by the TA, support was sought more consistently and earlier in the project design process. This resulted in consistently higher quality CRAs

<sup>3</sup> ADB. 2016. *Pacific Approach 2016–2020*. Manila; ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila.

<sup>4</sup> ADB. 2020. *Technical Assistance for Support to Climate Resilient Investment Pathways in the Pacific*. Manila.

	and a collective advance in the PARD-wide understanding of, and attention to, climate change adaptation.
Management of staff and consultants	Despite the succession of three project officers during project implementation, the planned activities were carried out satisfactorily and the quality of TA inputs even improved toward the last few years of the TA. This can be attributed to a combination of strong leadership on the part of ADB project officers and consistency in the three main consultants that were retained under the TA. One lesson is to continue engaging long-term with consultants who can offer multi-faceted support, while also hiring short-term consultants for more specialized work.
Knowledge building	During the more than 5 years of TA implementation, knowledge on climate processes, variability, and extremes—globally and in the Pacific—progressed considerably. However, much of the climate risk assessment in the Pacific still relies on projections from over 5 years ago. While waiting for the upcoming 2021 Intergovernmental Panel on Climate Change sixth assessment report, which will feature new state-of-the-art CMIP6 models, the TA recognized that ADB investments must be informed by the latest climate science, especially regarding sea level rise and extreme rainfall. Hence, two of the knowledge products developed under the TA focused on projections for these hazards. In addition, there was a recognition that PARD projects need to be informed by more advanced GIS-based modeling of climate risks. The TA provided considerable input into the final scope of work for a comprehensive multi-hazard risk assessment for Tongatapu, Tonga—undertaken through TA 9464-REG (footnote 2)—which will serve as a model for a risk-based planning approach to inform future multisectoral ADB investments. Finally, the TA explored the gender/climate change nexus, an area of understanding that could be expanded in the future.
Stakeholder participation	As previously explained, the TA was mostly designed to interact with ADB project officers and teams, with the assistance linked to ADB investment projects. Thus, the TA stakeholders did not typically include counterparts in the Pacific DMCs. However, this level of engagement proved to be a limitation as the TA sought to promote a more systematic and evidence-based approach to climate risk assessment. In the last 2 years of the TA, this situation improved significantly, for instance through engagement with the atoll countries through the Atoll Adaptation Dialogue. In coordination with ADB country offices, the PARD's climate change team is now engaging more directly with national ministries in charge of climate change.
Partnership and cofinancing	PARD keeps in close contact with partners in the Pacific region. These include climate teams of multilateral partners like the World Bank, bilateral agencies from Australia, New Zealand, Japan, and the US, and regional organizations such as the Secretariat of the Pacific Regional Environment Programme, the Secretariat of the Pacific Community, and the Pacific Regional Infrastructure Facility. Over the past couple of years, the PARD climate change team, aided by the TA, has started to more actively engage with these and other partners on climate change issues. This has been achieved through support for regional events, such as the capacity building training course on adaptation pathways, and also through the development of technical reports that seek to achieve scientific consensus on key climate change issues in the Pacific region (e.g., sea level rise projections).
Replication and/or scaling up	The follow-on TA 6683-REG will build on the significant progress made under TA 8961-REG to support climate resilient investment pathways in the Pacific. This approach will require that TA 6683-REG's inputs are provided at an earlier stage in the project cycle, so that the selection of ADB-supported projects and fundamental project designs are informed by climate change considerations (as opposed to simply climate-proofing projects that are already approved for implementation). To this end, TA 8961-REG produced guidance notes and conducted studies and workshops in preparation for the new approved TA.
Post-TA financial resource	Follow-on TA 6683-REG with funding of \$2.0 million.

### Follow-up Actions

As earlier stated, follow-on TA 6683-REG was approved by ADB management. In addition, the lessons learned from the TA will be applied to the Pacific Approach 2021–2025, which is for approval in 2021.

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**Designation and Division:** Principal Climate Change Specialist, PAEN

## DESIGN AND MONITORING FRAMEWORK

<b>Impact:</b> Strengthened integrated risk management to enhance climate and disaster resilience (Draft Strategy for Climate and Disaster Resilient Development in the Pacific) <sup>a</sup>		
<b>Results Chain</b>	<b>Performance Indicators with Targets and Baselines</b>	<b>Achievements</b>
<b>Outcome</b>  Climate and disaster resiliency of investments in the Pacific increased.	By 2020:  a. At least two Pacific DMCs have adopted new sector-level procedures for incorporating climate change and DRM considerations into investments.  Baseline: NA  b. Flow of climate change finance for 2017–2020 reaches at least \$500 million, double the level of the previous 4 years. Baseline: 2013–2016 climate change financing in Pacific DMCs (roughly \$250 million)	Overall, the TA achieved its intended outcome to increase the climate and disaster resiliency of Pacific investments through achievement of target outputs.  a. Achieved. The TA supported the development of procedures to strengthen post-disaster budget management and execution for Palau and wrote proposals for large GCF-funded projects that transformed sectors in Nauru (transport) and Kiribati (water supply).  b. Achieved. For the period 2017–2020, a total climate financing of \$500.23 million was approved; \$470.93 million was committed in that 4-year period, while \$24.30 million was committed in January 2021.
<b>Outputs</b>  1. Climate and disaster risk management incorporated into investments in the Pacific   2. Capacity to improve climate and disaster risk management strengthened throughout region   3. Access to climate change financing supported in selected countries	1a. At least 15 new investments in the Pacific supported through climate change assessments, incorporation of climate-proofing options with gender considerations. Baseline: NA  2a. At least four new regional knowledge products, studies, or tools produced on climate and disaster risk management, and the systematic approach to achieve strategic climate resilience in the Pacific, including gender considerations. Baseline: NA  3a. At least 13 investment projects have submitted new cofinancing proposals to GCF or other climate financing sources. Baseline: NA	1a. Surpassed. The TA developed 34 disaster or climate change assessments for 23 Pacific investment projects. These assessments took different forms, including: <ul style="list-style-type: none"> <li>• 13 CRAs;</li> <li>• 10 CCAs that are required as a linked document (these are often a summary of the CRA);</li> <li>• 6 detailed location-specific climate projections pertinent to project designs (these were often used in the CRAs); and</li> <li>• 5 other types of assessments.</li> </ul> 2a. Surpassed. The TA produced eight studies/knowledge products as follows: <ul style="list-style-type: none"> <li>• 5 reports;</li> <li>• 1 brochure;</li> <li>• 1 tip sheet; and</li> <li>• 1 video.</li> </ul> 3a. Surpassed. The TA helped develop 18 proposals/applications worth \$150.55 million for 16 projects. Proposals were submitted to five climate financing sources, as follows: <ul style="list-style-type: none"> <li>• 4 to GCF (\$75.50 million);</li> <li>• 4 to GEF (\$17.50 million);</li> <li>• 3 to the Ireland Trust Fund for Building Climate Change and Disaster Resilience in Small Island Developing States (\$2.40 million);</li> </ul>

Results Chain	Performance Indicators with Targets and Baselines	Achievements
4. Capacity building of the Pacific DMCs in negotiating climate change agreements and financing	<p>3b. At least four new country-level or regional roadmaps and/or project pipelines developed for investments in climate change and DRM. Baseline: NA</p> <p>4a. Support given to at least four climate change events or workshops at the regional or international level with focus on the Pacific DMCs.</p>	<ul style="list-style-type: none"> <li>6 to the Asian Development Fund for Disaster Risk Reduction (\$54.40 million); and</li> <li>1 to the Climate Change Fund (\$0.75 million)</li> </ul> <p>3b. Surpassed. The TA helped develop seven new country-level or regional road maps and/or project pipelines.</p> <p>4a. Surpassed. The TA supported five events (two regional and three international) where Pacific DMCs' climate change concerns were the focus of discussions.</p>

### Actual Key Activities with Milestones

#### 1. Incorporating climate change and disaster risk management into investments in the Pacific (completed)

- 1.1 Consultations with PARD project officers, DMC representatives on climate and DRM needs and climate change and DRM priorities in PARD investments by Q4 2015 (completed).
- 1.2 Consultations with partner organization for supporting production of climate information relevant to PARD investments by Q1 2016 (completed).
- 1.3 Conduct of climate risk and vulnerability assessments, identification of disaster risk-based on available information, and identification of adaptation and DRM needs in PARD investments by Q4 2020 (completed).
- 1.4 Identification of climate and disaster proofing options and components for PARD investments, including ecosystem-based adaptation options and gender considerations by Q4 2020 (completed).
- 1.5 Review of PARD experience on climate change and the CCIP, with recommendations for updating the CCIP and communication and dissemination of lessons by Q4 2015 (completed).
- 1.6 Submission of updated CCIP, either as a new plan or as part of the Pacific Approach by Q1 2016 (completed).
- 1.7 Preparation of CC-DRM action plan by Q2 2018 (completed).
- 1.8 Creation of a PARD database for climate risk and vulnerability assessments and other climate information by Q4 2016 (completed).

#### 2. Strengthening capacity to improve climate and disaster risk management throughout the region (completed)

- 2.1 Consultations with relevant DMC representatives and development partners and regarding national priorities and climate change and DRM needs at sector level linked to PARD investments by Q1 2016 (completed).
- 2.2 Mapping of existing information resources on climate change and DRM by sector and on investment needs and options by Q2 2016 (completed).
- 2.3 Establishment of partnerships on climate change and disaster risk information by Q3 2016 (completed).
- 2.4 Development of regional knowledge products, studies or tools on climate and disaster risk management, including gender considerations by Q3 2020 (completed).
- 2.5 Presentation of guidance and tools to relevant stakeholders at the national level by Q3 2020 (completed).
- 2.6 Production of regional knowledge products or studies on climate change by Q4 2020 (completed).

#### 3. Supporting access to climate change financing in selected countries (unchanged)

- 3.1 Consultations with relevant stakeholders (PARD project officers, DMC representatives, development partners) regarding national priorities and climate risk management needs at sector level linked to PARD investments by Q2 2020 (completed).
- 3.2 Development of a road map and/or project pipelines for accessing climate finance in Pacific DMCs by Q2 2018 (completed).
- 3.3 Development of cofinancing proposal for GCF or other climate financing resources by Q4 2020 (completed).

#### 4. Capacity building of Pacific DMCs in negotiating climate change agreements and financing (completed)

- 4.1 Identify the platform/venue that will help the Pacific DMCs in bringing into focus their climate change concerns and find regional approaches to addressing them (completed).



4.2 Provide logistical support to the Pacific DMCs during events or workshops aimed at building their capacity to negotiate better climate change agreements and open accessibility to donor financing (completed).

**Actual Inputs**

Asian Development Bank: \$2,560,628.23

Climate Change Fund: \$607,740.60

Government: N/A

CC = climate change, CCA = climate change assessment, CCIP = climate change implementation plan, CRA = climate risk assessment, DMC = developing member country, DRM = disaster risk management, DRR = disaster risk reduction, GCF = Green Climate Fund, GEF = Global Environment Facility, NA = not available, PARD = Pacific Department, Q = quarter, TA = technical assistance.

<sup>a</sup> Secretariat of the Pacific Community. 2015. *Draft Strategy for Climate and Disaster Resilient Development in the Pacific (Version 17)*. Suva.

Source: Asian Development Bank.

## DETAILED OUTPUT-LEVEL ACHIEVEMENTS

### Output 1: Climate change and disaster risk management incorporated into investments in the Pacific.

**Target:** At least 15 new investments in the Pacific supported through climate change assessments, incorporation of climate-proofing options with gender considerations.

The target for this output was surpassed. As shown in the table below, the TA developed 34 disaster or climate change assessments for 23 Pacific investment projects. These assessments took different forms, including: 13 climate risk assessments (CRAs); 10 shorter climate change assessments that are required as a linked document (these are often a summary of the CRA); 6 detailed location-specific climate projections pertinent to project designs (these were often used in the CRAs); and 5 other types of assessments.

**Table 1: Assessments Produced by TA 8961**

Country	Project	CRA	CCA	CP	Other	Proposed adaptation measures
FIJ	Nadi Flood Alleviation	X				Construct flood diversion scheme and support flood warning and evacuation procedures.
KIR	Outer Islands Transport Infrastructure	X <sup>a</sup>	X	X		Protect boat ramps and causeways from wave overtopping and coastal erosion.
KIR	South Tarawa Water Supply	X				Increase design capacity of desalination plant to cover increased demand due to climate change.
FSM	Chuuk Water Supply and Sanitation	X <sup>b</sup>				Ensure that all infrastructure exposed to floods and landslides is designed to be sufficiently resilient.
FSM	Renewable Energy Development				X <sup>c</sup>	Protect photovoltaic solar from sea level rise, storm surge, increased temperatures and wind speeds.
PAL	Disaster Resilient Clean Energy Financing		X			Site surveys will look at condition and strength of the roof for rooftop solar to see if it can withstand strong winds.
PNG	Urban Water Supply and Sanitation			X		Improved design and strengthening of infrastructure to mitigate climate change risks.
PNG	Highlands Region Road Improvement Investment	X <sup>d</sup>	X			Design bridges to account for peak water discharges and peak water levels in the catchment areas.
PNG	Power Sector Development		X			The infrastructure design of the substations and transmission lines was found to be climate resilient.
PNG	Sustainable Highlands Highway Investment (MFF)	X				Bioengineering to increase adjacent slope stability and watershed management in micro-catchments.
PNG	Sustainable Highlands Highway Investment (Tranche 2)	X <sup>d</sup>	X			Design bridges to account for peak water discharges and peak water levels in the catchment areas.
PNG	Water Supply Scheme for Tete Settlement	X <sup>b</sup>				Pipelines and storage tanks be designed with a buffer capacity to allow for increased demand during drought.

Country	Project	CRA	CCA	CP	Other	Proposed adaptation measures
RMI	Ebeye Solid Waste Management	X <sup>b</sup>	X			Construct seawall to protect the incinerator and dump site from coastal flooding.
RMI	Energy Security	X	X			Strengthen and raise sea wall to protect rehabilitated fuel handling and storage facilities.
SAM	Alaoa Multi-purpose Dam				X <sup>e</sup>	SAM Alaoa Dam height should take into consideration higher flood risk in the catchment due to extreme rainfall events.
SOL	Urban Water Supply and Sanitation	X		X	X <sup>f</sup>	At water treatment plant, allow for a 25% increase in frequency of turbidity events.
TIM	Coffee and Agroforestry Livelihood Improvement			X		Assess the suitability of varieties and ensure protocols for seed selection and plant propagation.
TON	Integrated Urban Resilience			X		Construct new and rehabilitate existing flood management infrastructure to reduce future flooding.
TON	Tonga Renewable Energy		X			Increase foundation height of battery energy storage system and transformers.
TUV	Funafuti Water and Sanitation				X <sup>g</sup>	Rainfall analysis to inform the proposed design and construction of a rainfall harvesting system.
VAN	Luganville Urban Water Supply and Sanitation	X <sup>h</sup>		X		Implement measures to minimize droughts risks, such as water loss detection and water conservation.
VAN	Greater Port Vila Urban Resilience		X		X <sup>i</sup>	Two planned emergency shelters will be built and located to withstand extreme storm conditions.
VAN	Inter-Island Shipping	X <sup>b</sup>	X			Increase level of all infrastructure and strengthen wharf foundations to adapt to further sea level rise.

CP = climate projection, CCA = climate change assessment, CRA = climate risk assessment, FIJ = Fiji, FSM = Federated States of Micronesia, KIR = Kiribati, NAU = Nauru, PAL = Palau, PNG = Papua New Guinea, RMI = Republic of the Marshall Islands, SAM = Samoa, SOL = Solomon Islands, TIM = Timor-Leste, TON = Tonga, TUV = Tuvalu, VAN = Vanuatu.

<sup>a</sup> Combined disaster and climate risk assessment.

<sup>b</sup> Rapid CRA (requires no travel and new data to be collected and takes roughly a week to complete).

<sup>c</sup> Disaster risk assessment.

<sup>d</sup> Detailed CRA for at-risk bridges, including hydrological modeling of the catchments.

<sup>e</sup> Projections for sea level rise and extreme rainfall to incorporate into hydrologic and hydraulic models of the catchment.

<sup>f</sup> Assessment on the relationship between rainfall data and turbidity.

<sup>g</sup> Stochastic rainfall modelling analysis.

<sup>h</sup> Completed at the pre-feasibility stage.

<sup>i</sup> City-level climate and disaster risk assessment.

In addition, the TA provided extensive support that is not captured by the Output 1 target. This support included substantive input into the planning, preparation, and review/finalization of an estimated 20 CRAs completed by PARD project teams and also into the scope of work for a comprehensive multi-hazard risk assessment for Tongatapu, Tonga (undertaken through TA 9464-REG). TA consultants also completed 11 Aware for Projects (AWARE) reports, a climate risk screening tool that helps determine if a CRA is required and contributed to SDCC documents and workshops focused on improving climate risk assessments.

## **Output 2: Capacity to integrate climate and disaster risk management in government planning processes strengthened throughout the region.**

Target: At least four new regional knowledge products, studies, or tools produced on climate and disaster risk management and the systematic approach to achieve strategic climate resilience in the Pacific, including gender considerations.

The target for this output was surpassed. The TA produced eight studies/knowledge products as follows:

- Brochure: *Building Resilience in the Pacific - How ADB is Addressing Climate Change and Disaster Risks*
- Report: *Literature review on sea level change in the Pacific Islands Region* (to be used for guidance note on how ADB should plan for sea level rise in the Pacific)
- Report: *Interim guidance on accounting for changes in extreme daily rainfall intensity in the Pacific*
- Tip Sheet: *Gender-Transformative Approaches to Build Climate Resilience: Tips for designing ADB projects based on experiences in the Pacific*
- Report: *Public-Private Partnerships for Coral Reef Insurance in Fiji*
- Report: *Public-Private Partnership for Coral Reef Insurance in Solomon Islands*
- Report: *Procedures to Strengthen Post-Disaster Budget Execution Capabilities, Palau*
- Video: *For Tonga, a Power Supply That Can Withstand a Cyclone is a Matter of Life and Death* showcasing climate resilient power infrastructure in Tonga

The TA also contributed to four KPs that were completed by other partners or through other TA projects. Contributions took the form of targeted inputs, review, and/or comments. These KPs include the following:

- Chapter on Gender and Social inclusion in the “Kiribati Climate Change and Disaster Risk Finance Assessment” in collaboration with The Pacific Community
- “A Review of Risk Information in the Pacific: Samoa, Tonga, and Tuvalu”, funded under TA 9464-REG
- “Towards a regional GIS approach for the management of climate and disaster risk data”, funded under TA 9464-REG
- “Economics of Upstream Climate Resilience for the Pacific”, prepared by SDCC, with inputs from PARD and TA

Additionally, the TA developed an online database that includes lists of projects with climate change interventions and financing, along with other climate change information relevant to the Pacific, and supported three Pacific Talk knowledge sharing sessions: “How can ADB ensure gender and social inclusion in climate change adaptation and mitigation actions?”; “Tuvalu LIDAR analysis and key findings and applications regarding sea level rise for an atoll nation,” and “Sea level rise among Pacific atolls-global to local considerations.”

## **Output 3: Access to climate change financing supported in selected countries.**

First target: At least 13 investment projects have submitted new cofinancing proposals for Green Climate Fund (GCF) or other climate financing resources.

This target was surpassed. The TA helped develop 18 proposals/applications for 16 projects. Proposals were submitted to five climate financing sources: GCF; Global Environment Facility (GEF); Ireland Trust Fund for Building Climate Change and Disaster Resilience in Small Island

Developing States; Asian Development Fund for Disaster Risk Reduction (ADF); and Climate Change Fund.

**Table 2: Climate Finance Proposals Developed by TA 8961**

Country	Project	GCF	GEF	ITF	ADF	CCF
KIR	Outer Islands Transport Infrastructure Investment				\$2.0 million	
KIR	South Tarawa Water Supply <sup>a</sup>	\$28.6 million	\$5.0 million			
FSM	Renewable Energy Development				\$4.0 million	
NAU	Sustainable and Climate-Resilient Connectivity	\$26.9 million				
PNG	Technical and Vocational Education/Training for Climate Resilient Employment	\$10.0 million <sup>b</sup>				
REG	Pacific Disaster Resilience Program			\$1.0 million		
REG	Strengthening Climate and Disaster Resilience of Investments in the Pacific					\$0.75 million
RMI	Energy Security				\$7.0 million	
SAM	Alaoa Multi-purpose Dam				\$20.0 million	
SOL	Land and Maritime Connectivity				\$12.4 million	
SOL	Urban Water Supply and Sanitation		\$5.0 million			
TON	Climate Resilience Partnership			\$0.7 million		
TUV	Funafuti Wastewater and Sanitation		\$5.0 million <sup>c</sup>			
VAN	Climate Change and COVID-19: Building Resilience in Poor and Vulnerable Groups	\$10.0 million <sup>b</sup>				
VAN	Greater Port Vila Urban Resilience		\$2.5 million <sup>d</sup>	\$0.7 million		
VAN	Luganville Urban Water Supply and Sanitation				\$9.0 million	

ADF = Asian Development Fund, CCF = Climate Change Fund, COVID-19 = coronavirus disease, FSM = Federated States of Micronesia, GCF = Green Climate Fund, GEF = Global Environment Facility, ITF = Ireland Trust Fund, KIR = Kiribati, NAU = Nauru, PNG = Papua New Guinea, REG = regional, RMI = Republic of the Marshall Islands, SAM = Samoa, SOL = Solomon Islands, TON = Tonga, TUV = Tuvalu, VAN = Vanuatu

<sup>a</sup> Along with the GCF and GEF proposals, the TA funded a study on greenhouse gas emissions reduction from reducing need to boil water.

<sup>b</sup> Estimated amount for this project from the \$150 million, "Community Resilience Partnership Program", which will include at least 15 projects from around Asia and the Pacific.

<sup>c</sup> Proposal is still in draft form; technical assistance also funded study on sanitation in Funafuti.

<sup>d</sup> First draft of proposal submitted to GEF.

Second target: At least four new country-level or regional roadmaps and/or project pipelines developed for investments in climate change and disaster risk management.

This target was surpassed. The TA prepared the following:

- Roadmap to increase funding from the Green Climate Fund for PARD projects, as part of efforts to strengthen relations with the GCF Secretariat and key GCF Pacific stakeholders;
- Initial “zero draft” of GCF proposal for Pacific Regional Renewable Energy Program, which intended to support a regional pipeline of renewable energy projects in the Pacific;
- First draft of a concept note “Advancing Disaster Risk Financing in the Pacific,” which led to the Pacific Disaster Resilience Program (initially focused on Tonga and Samoa);
- Pipeline action plan for potential GCF-funded projects in PNG, focused on the transport and energy sectors;
- Action plan for 2018-2020, a roadmap that proposed strategies and activities in five areas, including increasing climate finance targets;
- A concept note submitted to GEF for a regional water/urban program, which paved the way for the four GEF proposals that were submitted; and
- Trust Fund Contribution Arrangement from the Government of Ireland for a €12.00 million pipeline of projects to support climate change and disaster resilience in small island developing states.

#### **Output 4: Capacity building of Pacific DMCs in negotiating climate change agreements and financing.**

Target: Support given to at least four climate change events or workshops at the regional or international level with focus on Pacific DMCs.

This target was surpassed. The TA supported five events (two regional and three international) where Pacific DMCs' climate change concerns were the focus of discussions, as follows:

- Pre-COP 23 workshop held in Nadi, Fiji in October 2017;
- 23rd Session of the Conference of the Parties to the UN Convention on Climate Change (COP 23) held in Bonn, Germany in November 2017;<sup>5</sup>
- Second Atoll Adaptation High Level-Dialogue held in Maldives in August 2019 (co-funded with PARD's TA 8088-REG: Enhancing Engagement with Pacific Developing Member Countries, Phase 2; and SDCC's TA 8606-REG: Enhancing Readiness of ADB Developing Member Countries for Scaled Up Climate Finance, and TA9461-REG: Promoting and Investing in Natural Capital in Asia and the Pacific;
- Panel discussion led by the Coalition of Atoll Nations against Climate Change (CAN-CC) at the COP meeting held in Madrid, Spain in December 2019; and
- Capacity building training course on adaptation pathways for small island development states (SIDS). The course, offered twice in December 2020, was hosted by PARD and the Climate Change and Disaster Risk Management Division and facilitated by Deltares, an independent institute for applied research.

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<sup>5</sup> An amount of \$1 million was given to the Fiji Government through the TA to assist them in presiding over COP 23 (including the pre-COP workshop), to cover the costs for planning and preparing for the events, as well as for travel, per diem, accommodation, local transport, etc. Outcome 4 was added to the TA for this purpose.

## TECHNICAL ASSISTANCE COST

**Table A3.1: Technical Assistance Cost by Activity**  
(\$'000)

Item	Amount					Actual
	Original	Revised	Revised	Revised	Revised	
1. Consultants	855.00	855.00	1,815.00	2,437.00	2,061.00	2,064.01
2. Training, seminars and/or conferences	35.00	1,060.00	1,220.00	1,304.00	1,254.00	1,063.45
3. Studies	0.00	5.00	105.00	79.00	105.00	1.51
4. Miscellaneous TA administration	10.00	55.00	85.00	105.00	105.00	39.40
5. Contingency	100.00	25.00	25.00	25.00	25.00	0.00
<b>Total</b>	<b>1,000.00</b>	<b>2,000.00</b>	<b>3,250.00</b>	<b>3,950.00</b>	<b>3,550.00</b>	<b>3,168.37</b>

Source: Asian Development Bank estimates.

**Table A3.2: Technical Assistance Cost by Fund**  
(\$'000)

Item	TASF	CCF	Total Cost
1. Original	1,000.00	0.00	1,000.00
2. Revised	2,800.00	750.00	3,550.00
3. Actual	2,560.63	607.74	3,168.37
4. Unused	239.37	142.26	381.63

CCF = Climate Change Fund, TASF = Technical Assistance Special Fund.

Source: Asian Development Bank estimates.