



1. Project Data

Project ID P147839	Project Name PACIFIC RESILIENCE PROGRAM - SPC	
Country Pacific Islands	Practice Area(Lead) Urban, Resilience and Land	
L/C/TF Number(s) IDA-D0740,TF-14369,TF-A1131	Closing Date (Original) 30-Nov-2020	Total Project Cost (USD) 9,464,958.78
Bank Approval Date 19-Jun-2015	Closing Date (Actual) 31-Oct-2023	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	9,474,000.00	6,114,000.00
Revised Commitment	9,767,061.97	5,899,083.08
Actual	9,541,007.60	5,899,083.08

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2. Project Objectives and Components

a. Objectives

According to the Project Appraisal Document (PAD) (p.xi) and the Financing Agreement of October 2, 2015 (p. 5) the objective of the project was “to strengthen early warning, resilient investments, and financial protection of the participating countries”.

During the project restructuring in 2021, the PDO was revised to “strengthen early warning and resilient investments of participating countries” to be better aligned with project activities.



The original objective will be parsed as follows:

- I. To strengthen early warning of participating countries;
- II. To strengthen resilient investments of participating countries; and
- III. To strengthen financial protection of participating countries.

The revised objective will be parsed as follows:

- I. To strengthen early warning of participating countries; and
- II. To strengthen resilient investments of participating countries

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

Did the Board approve the revised objectives/key associated outcome targets?

Yes

Date of Board Approval

18-Feb-2021

c. Will a split evaluation be undertaken?

Yes

d. Components

The project was the first phase of the program and included the following parts as stated in the Financing Agreement (p. 5). Since the PAD was a joint programmatic appraisal document for the six projects (four national, two regional), it was broader than the legally binding Financing Agreement. Therefore, the ICR, and this Review use the information in the Financing Agreement to describe the areas of engagement.

Part 1: Strengthening Early Warning and Preparedness (appraisal estimate US\$2.29 million, actual US\$3.0 million):

Sub-component 1.1: Impact Forecasting: This sub-component was to finance the development of operational hazard models to forecast impacts of extreme events including tropical cyclones, storm surges, flooding at sub-national levels, and incorporating these models into the participating countries' multi-hazard warning platforms.

Sub-component 1.2: Strengthening preparedness for response: This sub-component was to finance a program of activities designed to strengthen the preparedness and response capacity within each participating country for climate- and disaster-related emergencies, including provision of technical

assistance and advisory services and development of a platform to provide access to the range of knowledge, training and education material on early warning and preparedness.



Sub-component 1.3: Post-disaster recovery: This sub-component was to finance a program of activities designed to enhance the Pacific Community's (SPC's) capacity for undertaking post-disaster needs assessments (PDNAs).

Part 2: Risk Reduction and Resilient Investments (appraisal estimate US\$5.71 million, actual US\$3.76 million): This part included four sub-components:

Sub-component 2.1 Strengthening multi-hazard risk information systems and development of decision tools: This sub-component was to finance a program of activities designed to strengthen multi-hazard spatial risk data and information systems, including development of modern digital information and data decision support/tools.

Sub-component 2.2: Testing decision support systems: This sub-component was to finance a program of activities designed to test and apply decision support systems for resilient planning and investments at the national level.

Sub-component 2.3: Decision-making tools for community-based approaches: This sub-component was to finance the development of decision-making tools for integrated community-based approaches to resilience for disaster and climate change, including pre-feasibility studies for priority community investments and a regional atoll islands study.

This sub-component was dropped after the Mid-Term Review since it was decided that several tools and good practices in community resilience already existed in the region.

Sub-component 2.4: Knowledge sharing: This sub-component was to finance the development of effective and innovative processes to share knowledge and information with participating countries.

Part 3: Program/Project Implementation Support (appraisal cost: US\$1.47 million; actual cost: US\$2.37 million). This component was to strengthen the capacity of SPC for a) project implementation and b) provision of implementation support to the participating countries, including the establishment and maintenance of a regional Program Support Unit (PSU).

e. **Comments on Project Cost, Financing, Borrower Contribution, and Dates**

Project cost: The project was estimated to cost US\$9.79 million. Actual cost was US\$9.13 million.

Financing: The project was financed by an IDA grant in the amount of US\$3.68 million (of which US\$3.58 million disbursed) and a Trust Fund (TF) (TF-A1131) in the amount of US\$5.79 million (of which US\$5.66 million disbursed). According to the World Bank team (communication with IEG on August 30, 2024), the project received a Project Preparation Grant (TF-14369) of US\$320,000 that was closed before project implementation started. Of this grant US\$0.12 million had not yet been recovered from the first disbursement advance at the time the ICR was finalized.

Borrower contribution: It was not planned for the Borrower to make any contribution.

Dates: The project was restructured three times:



- On June 21, 2019, the project was restructured (level 2) to: i) extend the closing date by 23 months to October 31, 2022 to allow for the implementation of the technical components which had been delayed due to failures to procure technical positions to assist with implementing the components; ii) modify components; iii) drop an intermediate outcome indicator under component 2; iv) modify disbursement estimates; and v) change the name of the recipient agency.
- On February 18, 2021, the project was restructured (level 1) to: i) modify the PDO to ensure that the PDO is realigned with the actual activities supported under the project; and ii) revise intermediate outcome indicators to ensure that activities are reprioritized to better address the needs of the participating countries as well as add new intermediate outcome indicators.
- On October 11, 2022, the project was restructured (level 2) to extend the closing date by 12 months to October 31, 2023, to allow for the completion of project activities which had been delayed due to the Covid-19 pandemic and the 2022 Hunga Tonga-Hunga Ha'apai volcano eruption.

The project became effective on June 19, 2015. The original closing date was November 30, 2020, and the actual closing date was October 31, 2023, i.e., a 35 months (2 years and 11 months) extension.

Split Evaluation: The scope of the project was reduced, the objective was changed, and several indicators were dropped and replaced by new indicators during the first restructuring in 2019 and the second restructuring in 2021. Therefore, this review will conduct a split rating.

3. Relevance of Objectives

Rationale

Country/region and sector context. At the time of project appraisal, the Pacific Island Countries (PICs) were amongst the most vulnerable nations in the world in terms of climate change impact and natural hazards including cyclones, earthquakes, tsunamis, volcanic eruptions as well as flooding and drought. As a result of climate change, a growing population, and increased land scarcity, this vulnerability (climate change and intensely populated areas) was expected to increase. While PICs had been strengthening early warning and preparedness as well as mainstreaming climate and disaster resilience, they lacked knowledge and financial capacity to generate sufficient economies of scale to develop effective early warning, risk transfer mechanisms and in translating resilient plans effectively into sector investments.

The Pacific Resilience Program (PREP) was developed in 2015 as a multi-phase series of projects with complementary regional and national activities. The program included three pillars: i) strengthened early warning; ii) strengthened resilient investments; and iii) strengthened financial protection. Phase 1 of the program included Samoa, Tonga, Republic of the Marshall Islands (RMI), and Vanuatu. The projects in Samoa and Tonga focused on all three pillars while the projects in RMI and Vanuatu only focused on pillar iii. At the regional level there were two projects. In one project SPC provided support to participating PICs in early warning and resilient investments and in another project the Pacific Island Forum Secretariat (PIFS) focused on financial protection and regional coordination. This project only focused on sub-objectives i) and ii). Sub-objective iii) was done by a different project.

Alignment with the Government strategy. The objective of the project supported the PIC's new 2050 Strategy for the Blue Pacific Continent with climate change and disasters being one of the seven thematic



areas. The strategy emphasizes the importance of investments in innovative research to address climate and disaster risks and regional cooperation to build community capacity and resilience. However, the strategy does not mention strengthening early warning as a key objective. Also, the objective supported the 2017-2030 Framework for Resilient Development in the Pacific (FRDP) and two of its three goals; goal 1 “strengthened integrated adaptation and risk reduction to enhance resilience to climate change and disasters” and goal 3 “strengthened disaster preparedness, response and recovery”. In addition, the FRDP identified strengthening the capacity of hydro-meteorological and seismological services and providing data and infrastructure to support early warnings and risk information as critical. Furthermore, the objective of the project was in line with SPC’s Strategic Plan 2022-2031 and its key focus area 1 “resilience and climate action”.

Alignment with the World Bank strategy. The objective of the project was in line with the World Bank Regional Partnership Framework (FY17-2021). Objective 3.1, “Strengthen resilience to natural disasters and climate change,” under focus area 3, “protecting incomes and livelihoods,” recognized that climate change and rising natural disasters represent a serious threat to PICs and an existential threat to all nations. The project was built on the World Bank’s extensive experience in supporting PICs with DRM and climate change adaptation since the late 1990s.

The objective addressed a critical development problem and was pitched at an appropriate level given the country’s capacity. However, one aspect of the PDO was “financial protection”, which the project activities did not focus on.

Rating

Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To strengthen early warning of participating countries.

Rationale

Theory of Change: The project’s theory of change stated that inputs/activities such as providing technical assistance to strengthen impact forecasting and preparedness would result in several outputs. These outputs were to include impact forecasting models/maps in place, trainings in disaster preparedness and response provided, models incorporated into national Multi-Hazard Early Warning System (MHEWS), and a knowledge platform. These outputs were to result in the outcome of strengthened early warning systems in participating countries.

The theory of change was sound and logical.



Outputs

- Staff trained in DRM-related areas by the project in Samoa (42), Tonga (45), Vanuatu (30) and RMI (20), of which 85% reported having applied learned skills to their job, according to SPC end-of-project survey. The target of 80 percent of multi-hazard early warning systems' professional staff being trained and/or retained was achieved.
- The target of 70 percent of users of the multi-national spatial risk data and information system being satisfied, was not measured.
- The target of 70 percent of risk exposure data for PREP countries being updated was not measured.
- The target of 50 percent of assets in at least two targeted urban areas with risk information available to inform resilient planning was not measured.
- The target of 50 community-based disaster risk management/climate resilience projects being developed by the project in targeted areas was not measured.
- The target of 60 percent of beneficiaries in communities being aware of project information and project support investments was not measured.

Outcomes:

- The target of 80 percent of the population at risk in Samoa and 70 percent of the population at risk in Tonga being covered by hazard forecast and warning messages was dropped at restructuring. Annex 7 in the ICR states that the coverage is estimated at 70% of the population at risk of Tongatapu and 'Eua, the islands where PREP-SPC assistance focused on.
- 137,704 people benefitted from the project, achieving the original target of 135,000 people. The indicator included a baseline of 62,000 project beneficiaries (2015). The PAD defined beneficiaries as the population in Samoa and Tonga who were able to receive timely and actionable hazard forecasts and warning messages, understand the meaning and know what actions to take. However, it is not clear how the project measured that people know what actions to take; receiving timely and actionable hazard forecasts and warning messages does not mean that beneficiaries understand the meaning and know how to take appropriate action.

Only one of the outputs and only one out of two outcome indicators were retained at project closing. Overall, the objective is rated as Modest.

Rating

Modest

OBJECTIVE 1 REVISION 1

Revised Objective

To strengthen early warning of participating countries.

Revised Rationale



The objective and the theory of change remained the same but several indicators were revised and the targets were reduced and units of measurement were changed (e.g. from percentage to numbers) during the February 2021 restructuring.

Outputs:

- The number of staff working in the disaster management area and applying learned skills on the job increased from 40 staff in 2015 to 116 staff in 2023, **exceeding the revised target of 70 staff**.
- 16 users (staff from the National Disaster Management Offices in Tonga and Samoa that were trained in the usage) were satisfied with the early warning system, **achieving the revised target of 15 staff**.
- The hazard model for forecasting of impacts of extreme weather events was operationalized, **achieving the target of the model being operationalized**. As a result of the impact forecasting models and training delivered and incorporated into national MHEWS, the following outcomes were achieved:
 - Targeting, accuracy, and response to early warnings, as demonstrated by the high wave event in Samoa in August 2023, improved.
 - Capacity to forecast damage of costs, issue seasonal forecasts, and to generate maps for forecasted impacts was built.

The ICR reported on the following additional outputs that were not included in the Results Framework and hence did not have a target:

- Seismic monitoring capacity in Samoa, Tonga and Vanuatu as well as on the regional level was strengthened through: i) updating the countries' seismic monitoring computers and software, and ORSNET's server and webpage; ii) providing five mobile seismic stations housed at SPC, as temporary replacements for countries' damaged stations during repairs; iii) training 41 staff from participating PICs; and iv) developing a strategic plan for ORSNET.
- 48 middle-management staff from Samoa, Tonga, and Vanuatu completed the region's first accredited Certificate IV in DRM Team Leadership course which was designed and delivered by the project. Two modules focused on disaster preparedness and three models covered disaster response. About 67 percent of participants, who were interviewed at project completion that they were highly satisfied, and 100 percent found it applicable to their daily work.
- In Samoa a System Integrator was procured.

Outcomes:

- 137,704 people benefitted from the project, achieving the original target of 135,000 people. The PAD defined beneficiaries as the population in Samoa and Tonga who received timely and actionable hazard forecasts and warning messages, were able to understand the meaning and to know what actions to take. The indicator included a baseline of 62,000 project beneficiaries (2015). The PAD defined beneficiaries as the population in Samoa and Tonga who were able to receive timely and actionable hazard forecasts and warning messages, understand the meaning and know what actions to take. However, it is not clear how the project measured that people know what actions to take; receiving timely and actionable hazard forecasts and warning messages does not mean that beneficiaries understand the meaning and know how to take appropriate action.
- Due to the seismic monitoring activities the project supported, PICs are able to share a regional platform for automatic early detection of geohazards in up to 30 seismic stations and issue more



accurate warnings within five minutes or less on an occurrence (before this project PICs needed at least 15 to 20 minutes). Also, as a result of the project, Vanuatu experienced a 572 percent increase in Quick Epicenter Determination events between June and September 2023 compared to the “without project” scenario. Also, the Vanuatu Meteorology and Geo-Hazards Department reported better monitoring and volcanic warnings as a result of the project.

The project delivered well on several outputs and achieved the targets for doing so. However, it was not clear how some of the simple numerical targets meant relative to the total for example, the target of 15 users (staff from the National Disaster Management Offices in Tonga and Samoa that were trained in the usage) satisfied with the early warning system. It also achieved the outcome level targets though it was not clear how the project measured that people know what actions to take. The rating is Substantial with moderate shortcomings.

Revised Rating

Substantial

OBJECTIVE 2

Objective

To strengthen resilient investments of participating countries.

Rationale

Theory of Change: The project’s theory of change stated that inputs/activities such as developing a regional platform to support risk reduction and resilient investment planning were to result in several outputs. These outputs were to include multi-hazard risk planning and decision support/tools in place, decision support systems for resilient planning investment in place at the national level, and an established platform for knowledge sharing. These outputs were to result in the outcome of resilient investments of participating countries being strengthened.

The theory of change was sound and logical.

Outputs:

- The target of 50 community-based disaster risk management/climate change resilience projects being developed by the project in targeted areas was dropped at restructuring. Table 7.3 notes that 22 larger-than-community resilient projects were identified in the islands of Tanna and Malekula (Vanuatu).
- 100 percent of public assets had risk information available to inform resilient planning in targeted areas, achieving the target of 100 percent.
- The target of 70 percent of risk exposure data for PREP being updated was not measured.
- The target of 60 percent of beneficiaries being aware of project information and project support investments was not measured.

Outcomes:



The project's Results Framework did not include any outcome level indicator to measure the achievement of this objective. Also, no other evidence on the outcome level was provided. However, the project was able deliver some outputs. Overall, the achievement of this objective is rated Modest.

Rating
Modest

OBJECTIVE 2 REVISION 1

Revised Objective

To strengthen resilient investments of participating countries.

Revised Rationale

The objective and the theory of change remained the same but several indicators were revised and the targets were reduced and units of measurement were changed (e.g. from percentage to numbers) during the February 2021 restructuring.

Outputs:

- A post-disaster needs assessment was undertaken and strengthened, **achieving the target of undertaking and strengthening a post-disaster needs assessment**. This indicator was added during the 2021 restructuring.
- Multi-hazard risk information systems were strengthened and were in use in Vanuatu and Tonga, **achieving the target of multi-hazard risk information systems being strengthened and used**. This indicator was added during the 2021 restructuring.
- A high-resolution Digital Elevation Model was developed and operationalized in target areas, **achieving the original target of developing and operationalizing such model**. This indicator was added during the 2021 restructuring.

Outputs that were not included in the Results Framework:

- According to the World Bank team (September 30, 2024) the project also produced Risk Assessments and Resilient Investment Plans for the Tanna and Malekula Islands in Vanuatu, and Concept Town Plans for future expansion of their two capitals (Lenakel and Lakotoro). Risk assessments were carried out for all key public assets, and 22 priority resilient investments (larger than at the community level) were identified.
- The project trained 196 national staff from Samoa, Tonga, RMO and Vanuatu to carry out PDNAs.

Outcomes:

The project's Results Framework did not include any outcome level indicator to measure the achievement of this objective. Also, no other evidence on the outcome level was provided. Therefore, it is not clear if the objective of strengthening resilient investments of participating countries was achieved.



Overall, the project delivered several outputs that have the potential to contribute to strengthening resilient investments. However, it is not clear how some of the outputs such as a PDNA contributed to the PDO outcomes during the project duration. Given the lack of evidence on the outcome level as well as the limited number of output indicators that measured the achievement of outputs, the achievement of this objective is rated as weak Modest.

Revised Rating

Modest

OBJECTIVE 3

Objective

To strengthen financial protection of participating countries.

Rationale

No activities were undertaken under this objective. Therefore, this objective is rated Negligible. This sub-objective was dropped in the restructuring.

Rating

Negligible

OBJECTIVE 3 REVISION 1

Revised Objective

To strengthen financial protection of participating countries. - Dropped

Revised Rationale

This objective was dropped at the restructuring and is therefore not applicable.

Revised Rating

Not Rated/Not Applicable

OVERALL EFFICACY

Rationale

Original project: Achievement of two original objectives was Modest and one Negligible. Overall, it is rated as Modest pre-restructuring.



Overall Efficacy Rating

Modest

Primary Reason

Insufficient evidence

OVERALL EFFICACY REVISION 1

Overall Efficacy Revision 1 Rationale

Revised project: Achievement of the first objective was Substantial with shortcomings and achievement of the second objective was weak Modest. Overall Efficacy is rated Modest.

Overall Efficacy Revision 1 Rating

Modest

Primary Reason

Insufficient evidence

5. Efficiency

Economic efficiency:

The PAD (p. 16) conducted an Economic analysis for the entire PREP program. Benefits were defined as the quantifiable benefits from component 1 (investments in early warning and preparedness) and component 2 (risk reduction and resilient investment planning and preparation). Applying a discount rate of 10 percent, an Economic Internal Rate of Return (EIRR) was calculated at 19 percent, a Net Present Value (NPV) of US\$21.1 million and a benefit-cost ratio of 1.6, indicating that the program was a worthwhile investment.

At completion, an Economic analysis (applying a discount rate of 10 percent) was conducted on the strengthening of early warning in Samoa and Tonga. The costs included the actual costs of IBF, seismic monitoring and PSU support, and all costs of early warning investments in the two countries with annual operating and maintenance costs estimated at 10 percent. The analysis calculated an EIRR of 14.9 percent, an NPV of US\$5.5 million and a benefit-cost ratio of 1.6. While the analysis indicated that the investments into early warning in these two countries were a worthwhile investment, the results were not comparable to the analysis conducted at appraisal.

According to the ICR (para. 53) the project experienced several cost over-runs. For example, the impact forecasting cost was 32 percent higher than originally planned and the LiDAR contract resulted in a 29 percent cost overrun. The preparedness training and the Pacific Resilience Nexus were cost-effective, however, only costing 81 percent and 89 percent of the appraisal estimate.

Operational efficiency:

The project's closing date was extended by 35 months to accommodate procurement-related implementation delays, including the re-bidding of LiDAR activities, adjustments to contract scope, and delays related to the COVID-19 pandemic. Project management costs were US\$2.37 million, 26 percent of the total project cost, exceeding the appraisal estimate by 61 percent. World Bank supervision costs were also high at US\$1 million (10.5 percent of project cost).



Given the operational inefficiencies, the project's efficiency is rated Modest.

Efficiency Rating

Modest

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate		0	0 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

	Original Project	Revised project
Relevance	Substantial	
Objective 1	Modest	Substantial
Objective 2	Modest	Modest
Objective 3	Negligible	N/A
Efficacy	Modest	
Efficiency	Modest	
Outcome rating	Moderately Unsatisfactory	Moderately Unsatisfactory
Numeric value of outcome rating	3	3
Disbursement (US\$m)	3.51	5.96
Share of disbursement	37%	63%
Weighted value of the outcome rating	1.11	1.89
Total weights	1.11 + 1.89 = 3 Moderately Unsatisfactory	
Overall outcome rating	Moderately Unsatisfactory	

Original project: Relevance of the objective was Substantial, Efficacy and Efficiency were Modest, resulting in an outcome rating of Unsatisfactory.



Revised project: Relevance of the objective was Substantial, Efficacy and Efficiency were Modest, resulting in an outcome rating of Moderately Unsatisfactory.

Given the weighted value of the original and revised project, the overall outcome rating is Moderately Unsatisfactory.

a. Outcome Rating

Moderately Unsatisfactory

7. Risk to Development Outcome

Government's commitment risk: According to the World Bank team (August 29, 2024) the risk of decreasing government commitment is currently low due to political stability. For example, SPC's Disaster and Community Resilience Programme is the largest of SPC's Geoscience, Energy and Maritime Division. The organization continues to support the respective countries through ongoing programs and technical support. These programs (amongst others) include: Building Safety and Resilience in the Pacific (BSRP) II and Pacific Island Emergency Management Alliance (PIEMA).

In Samoa, the government is planning to operationalize and pilot Impact based focusing warning system (IBFWS) in 2025, building on from the works done under the SPC -PREP1 Project. In Tonga, the government continues to undertake policy reforms to strengthen their resilience framework, including the approval and implementation of the National Disaster Risk Management Policy and the Multi-hazard Early Warning System Policy. In Vanuatu, the government is prioritization the development of provincial towns to facilitate resilience and economic growth and decentralize services to the subnational level.

Technical capacity risk: The project experienced a high staff turnover during project implementation which is likely to continue. Capacity built in entities may not remain or may need to be refreshed. Therefore, it will be critical to continue training staff in DRM. Also, according to the ICR (para. 90), while LiDAR data in Tonga and Vanuatu are expected to be used for resilient investment planning, national capacity constraints persist. According to the ICR (para. 44) counterparts from Vanuatu stated that they needed further specialized assistance to be able to use LiDAR data. The ICR (para. 91), stated that at the time of project closing, SPC was working with the University of the South Pacific and other different donors to deliver another cohort and was cooperating with regional partners and national training institutions to provide individual modules at the national level. However, it is not certain this will materialize.

Financial risk: According to the World Bank team (August 29, 2024) financing remains a challenge for some countries. However, some countries have taken initiatives to continue building on the results achieved through ongoing and pipeline programs (e.g. Samoa, Vanuatu).

8. Assessment of Bank Performance



a. Quality-at-Entry

According to the PAD (para. 39) the project took lessons learned from other World Bank projects from within and outside of the region into account when appraising this program. These lessons included the following: i) the importance of consolidating and strengthening existing implementation and institutional agencies for the participating Phase I countries, while being mindful not to over-burden existing resources; ii) the importance of defining clear roles and responsibilities between various stakeholders involved at the regional and national level; and iii) awareness that regional programs can be more complex and difficult to prepare and implement, therefore, a simple project design, clear focus on investments, and the inclusion of TA activities closely linked to investments would be essential.

However, the project's design ended up being overly complex and part 2 of the project (risk reduction and resilient investments) was overly broad and vague. According to the ICR (para. 63) support for the community-based activities changed substantially from appraisal to negotiations and was reduced from developing separate plans, tools, capacity for community resilience in key sectors to supporting integrated community plans.

According to the PAD (para. 55) the World Bank team identified several risks including the following: i) the technically and operationally complexity of the project; ii) weak implementation capacity; and iii) weak fiduciary capacity. The World Bank team tried to mitigate these risks by providing technical assistance, providing training, and including SPCs in the project to provide real time support to countries. However, not all mitigation measures were sufficient, and the project experienced several procurement related implementation delays. Also, the World Bank team did not identify the risk of difficulties in hiring technical experts for hydrometeorology modelling, risk analysis, and DRM, resulting in implementation challenges.

Furthermore, the Results Framework had several significant shortcomings such as the PDO formulation encompassing an objective that was not part of the project, an inadequate PDO indicator and lack of PDO indicator to measure the second aspect of the PDO - resilient investments (see section 9a for more details).

Quality-at-Entry Rating

Moderately Unsatisfactory

b. Quality of supervision

According to the ICR (para. 86) the World Bank team conducted supervision support missions on a bi-annual basis (17 supervision missions in total) with Task Team Leaders (TTLs) and fiduciary staff being based in the region which allowed for frequent face-to-face meetings. However, the project experienced a high turnover of staff (four TTLs and three co-TTLs), resulting in limited supervision during the initial years of implementation until the first project restructuring in 2019.

The ICR (para 86) stated that the project ratings were candid, aide memoires were concise with clearly agreed action plans that were monitored, and procurement reviews (conducted on an annual or bi-annual basis) identified bottlenecks and provided solutions.



The World Bank team restructured the project three times to address implementation challenges and revise the Results Framework. However, the shortcomings of the Results Framework were never addressed appropriately and no PDO indicator was added to measure the achievement of the second aspect of the PDO (resilient investments). Furthermore, the inadequate PDO indicator to measure the achievement of the first aspect of the objective was never revised either.

According to the ICR (para. 87) the World Bank team provided support during critical times. For example, in 2021 the World Bank team assisted the project team to scrutinize the cost of the proposed LiDAR extension to Efate Island resulting in an estimated saving of US\$355,000.

Overall, supervision was weak until the first project restructuring in 2019 and picked up afterwards and the World Bank team provided critical support to address implementation challenges. However, the World Bank team never sufficiently addressed the significant shortcomings in the Results Framework. Quality of Supervision is rated Moderately Satisfactory.

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Unsatisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The project's Results Framework had several shortcomings. First, the PDO included "financial protection", even though the project did not include any activities/inputs in this area. Therefore, when the project was restructured in 2021, the PDO was revised accordingly. And second, the Results Framework did not include any PDO indicators to measure the achievement of the expected outcomes. Instead, it only included one PDO indicator (the number of direct project beneficiaries) which was inappropriate to measure the project outcome. The PAD defined the "beneficiaries" as the "population in Samoa and Tonga who were able to receive timely and actionable hazard forecast and warning messages, understand the meaning and know what actions to take". However, this definition was overly complex and consisted of different aspects that were challenging to measure. Instead, the Results Framework could have included a PDO indicator that measured the time decreased between the occurrence of geohazards detection and warnings issued.

Furthermore, the Results Framework did not include a PDO level indicator to measure the second aspect of the PDO, to "strengthen resilient investments".

The intermediate outcome indicators were sufficiently specific, measurable, achievable and time-bound. However, two of the initial intermediate outcome indicators required beneficiary surveys in Tonga and Samoa, for which SPC did not have the appropriate capacity, resulting in the need to replace these two indicators.



According to the PAD (para. 49) the implementing agencies in each country and the PIFS at the regional level were responsible for the overall monitoring and evaluation of progress towards the PDO.

b. M&E Implementation

The project's Results Framework was restructured three times to modify the PDO and intermediate outcome indicators. However, shortcomings persisted throughout implementation. Three of the intermediate outcome indicators were overly simplified and targets were defined as "yes/no" with baselines and targets not sufficiently defined. For example, intermediate outcome indicator 3 ("multi-hazard risk information systems strengthened and in use") tried to measure two different aspects and did not provide a definition for "strengthened" or for "in use". Also, intermediate outcome indicator 1 ("number of personnel working in the disaster management area applying learned skills on the job") was meant to measure the number of personnel trained but did not provide a total number of personnel trained. Furthermore, intermediate outcome indicator 2 ("satisfaction of users with the early warning system") had a target of 16 users without stating the proportion of these users out of the total number of users.

According to the ICR (para. 74) the project's M&E activities were limited during the initial years of project implementation until 2020-21 when an M&E consultant was hired. From 2020 onwards, project reports were of good quality with consistent M&E reporting, and were submitted on a bi-annual basis. Furthermore, at project completion, the PREP-SOC project commissioned a final evaluation to survey 67 trainees and project stakeholders as well as to collect impact stories. The ICR (para 74) stated that M&E functions were likely to be sustained after project closure since an M&E officer continues to be employed by SPC within its Disaster Risk and Community Program.

c. M&E Utilization

According to the ICR (para. 75) M&E data were used to inform decision making. For example between mid-2018 and mid-2020, when the project's performance rating was Moderately Unsatisfactory, M&E data were used to make several changes including prioritizing regional activities while continuing PSU procurement support and focusing on high quality, value-added outputs while dropping activities covered by other funding.

Overall, the quality of M&E is rated as Modest.

M&E Quality Rating

Modest

10. Other Issues

a. Safeguards

The project was classified as category B and triggered the World Bank's safeguard policy OP/BP 4.01 (Environmental Assessment). The project prepared an Environmental and Social Management Framework (ESMF) for the PREP program. Also, the Financing Agreement included covenants that ensured that all



terms of reference for any technical assistance or studies conducted under the project complied with the World Bank's environmental and social safeguard policies and requirements and that these policies would be considered when drafting any regulations, guidelines, or corporate procedures.

The project's safeguard compliance was Satisfactory throughout project implementation.

b. Fiduciary Compliance

Financial Management:

According to the ICR (para. 79) the project delivered bi-annual Interim Financial Reports (IFRs) and annual audits which were of adequate quality and mostly submitted on time except for the 2016-2019 period when delays occurred. Also, all audits were unqualified and the ex-post reviews found that the project's financial management procedures, internal controls and recording of assets, revenues, and expenses as well as maintenance of a contract and fixed asset register were adequate. Furthermore, budgets and annual work plans were generally prepared in a timely manner.

In 2016 and 2017 the SPC submitted audits which covered the activities of the entire organization (as stated as an option in the PAD annex 8, para. 37). However, the World Bank team found that the 2017 audit did not meet the World Bank standards and the SPC had to conduct an audit specifically for the project which resulted in a three-month delay.

Procurement:

According to the ICR (para. 80) the project encountered several procurement related implementation delays resulting in low disbursement. Between mid-2017 and the end of 2020, the project's procurement performance was rated Moderately Unsatisfactory as a result of inefficient and weak work planning, complex SPC corporate procedures, and insufficient technical capacity. These challenges were only resolved in mid-2019 when a new project manager was hired and SPC and the World Bank agreed that contracts could go directly from the project manager to the director general of SPC for signing. In addition, a short-term procurement specialist was hired at the end of 2019 as well as a long-term procurement specialist at the beginning of 2020. These measures resulted in an improvement of the project's procurement performance as demonstrated through the increase in procurement from eight percent of the total estimated value in 2019 to 81 percent by 2020 with 37 contracts being signed. The ICR stated that while procurement post-reviews found incomplete document records in the Systematic Tracking of Exchanges in Procurement (STEP), there were no indications of fraud, corruption, or any other governance issues.

The project complied with all legal covenants and at project closure, the procurement rating was Satisfactory.

c. Unintended impacts (Positive or Negative)



NA

d. Other

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Unsatisfactory	Relevance of objective was Substantial, and Efficacy was Modest due to lack of evidence at outcome level, and Efficiency was Modest due to operational inefficiencies.
Bank Performance	Moderately Satisfactory	Moderately Unsatisfactory	Significant shortcomings in Quality at Entry due to weak Results Framework and complex project design, and these shortcomings were not sufficiently addressed during restructurings.
Quality of M&E	Modest	Modest	
Quality of ICR	---	Substantial	

12. Lessons

The project included several useful lessons learned, which were adapted by IEG:

- **If it is not ensured that a project, which is part of an SOP or a multiphase program approach, has its own PDO and Results Framework with PDO indicators reflecting the project’s scope and outcomes, it may jeopardize the ability to measure the project’s achievement.** This project adopted the broader PREP PDO, and the original PDO included an outcome (financial protection) that the project did not support. Also, the Results Framework did not include a PDO indicator to measure the second aspect of the PDO (resilient investments).
- **Allowing resilience projects some flexibility in terms of design and implementation can ensure their relevance.** This project’s original design was overly fragmented across too many activities, increasing the risk of project activities overlapping with other donor-funded projects. However, the flexibility of the World Bank and SPC during implementation allowed for an early restructuring to relocate funds to new opportunities such as LiDAR and ORNSET.
- **Providing DRM trainings in an environment with high staff turnover requires a careful consideration in terms of delivery mode.** This project was aware of the high staff turnover



and as a result provided online training to a large number of staff and costly face-to-face trainings to selected number of staff.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR provided an adequate overview of project preparation and implementation. It was also internally consistent and sufficiently candid about persistent issues during project implementation, such as a weak Results Framework. The ICR provided useful lessons that can be applied to future World Bank engagement in this area. However, the ICR would have benefitted from providing more data and a better narrative to demonstrate the achievement of the objectives rather than just the achievement of the indicators. Overall, the ICR's quality was Substantial.

a. Quality of ICR Rating

Substantial