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IMPLEMENTATION COMPLETION AND RESULTS REPORT
(TF-13360 TF-13361 TF-13362 TF-13363 TF-13364 TF-18141 TF-18142 TF-18143 TF-
18144)

ON A

GRANT

IN THE AMOUNT OF US\$4 MILLION

TO THE

PACIFIC ISLANDS (MARSHALL ISLANDS, INDEPENDENT STATE OF SAMOA,
SOLOMON ISLANDS, KINGDOM OF TONGA, AND VANUATU)

FOR A

PACIFIC CATASTROPHE RISK INSURANCE PILOT PROGRAM

September 14, 2016

Social, Urban, Rural and Resilience Global Practice
World Bank Office: Sydney
East Asia and Pacific Region

FISCAL YEAR
Marshall Islands October 1 – September 30
Samoa June 1 – May 31
Solomon Islands and Vanuatu January 1 – December 31
Tonga July 1 – June 30

ABBREVIATIONS AND ACRONYMS

AEL	Annual Expected Losses
CCA	Climate Change Adaptation
CCRIF	Caribbean Catastrophe Risk Insurance Facility
COP21	21st Conference of the Parties
DRFI	Disaster Risk Financing and Insurance
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EU	European Union
FEMM	Forum Economic Ministers Meeting
GDP	Gross Domestic Product
GENDR	Environment and Natural Resources Global Practice
GFDRR	Global Facility for Disaster Reduction and Recovery
GFM3A	Finance for Development Global Solutions Team of Finance and Markets Global Practice
GSURR	Urban, Rural and Social Development Global Practice
HFA	Hyogo Framework for Action
ICR	Implementation Completion Report
IDA	International Development Association
IFC	International Finance Corporation
ISDA	International Swap and Derivatives Association
ISR	Implementation Status Report
JTWC	Joint Typhoon Warning Center
KPI	Key Performance Indicator
LEGES	Legal for East Asia and Pacific and South Asia Regions
MDTF	Multi-Donor Trust Fund
MoF	Ministry of Finance
NLTA	Non-Lending Technical Assistance
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PDO	Project Development Objective
PDRFI	Pacific Disaster Risk Financing and Insurance
PIC	Pacific Island Country
QEA	Quality at Entry
QSA	Quality of Supervision
RMI	Republic of Marshall Islands
SEEC CRIF	Southeast Europe and Caucasus Regional Catastrophe Risk Insurance Facility
SPC	Secretariat of the Pacific Community
SOPAC	South Pacific Applied Geoscience Commission

TC	Tropical Cyclone
TCIP	Turkish Catastrophe Insurance Pool
TF	Trust Fund
TRE	World Bank Group Treasury
USGS	United States Geological Services
WBG	World Bank Group

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MARSHALL ISLANDS, INDEPENDENT STATE OF SAMOA, SOLOMON ISLANDS, KINGDOM OF TONGA, AND VANUATU

Pacific Catastrophe Risk Insurance Pilot Program

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A. Basic Information			
Country:	Pacific Islands	Project Name:	Pacific catastrophe risk insurance pilot program
Project ID:	P133255	L/C/TF Number(s):	TF-13360,TF-13361,TF-13362,TF-13363,TF-13364,TF-18141,TF-18142,TF-18143,TF-18144
ICR Date:	06/13/2016	ICR Type:	Core ICR
Lending Instrument:	TAL	Grantee:	PARTICIPATING PICS
Original Total Commitment:	USD 4.00M	Disbursed Amount:	USD 4.00M
Revised Amount:	USD 4.00M		
Environmental Category: C			
Implementing Agencies: World Bank Group Treasury , GFM3A			
Cofinanciers and Other External Partners:			

B. Key Dates				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	03/29/2012	Effectiveness:	12/05/2012	12/05/2012
Appraisal:		Restructuring(s):		09/26/2014
Approval:	11/16/2012	Mid-term Review:		
		Closing:	01/15/2015	01/31/2016

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Satisfactory
Risk to Development Outcome:	Substantial
Bank Performance:	Satisfactory
Grantee Performance:	Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	Ratings	Borrower	Ratings
Quality at Entry:	Satisfactory	Government:	Satisfactory
Quality of Supervision:	Highly Satisfactory	Implementing Agency/Agencies:	Not Applicable
Overall Bank Performance:	Satisfactory	Overall Borrower Performance:	Satisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	Indicators	QAG Assessments (if any)	Rating
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Satisfactory		

D. Sector and Theme Codes		
	Original	Actual
Sector Code (as % of total Bank financing)		
Flood protection	20	20
Non-compulsory pensions and insurance	80	80

Theme Code (as % of total Bank financing)		
Climate change	20	20
Debt management and fiscal sustainability	30	30
Natural disaster management	30	30
Other environment and natural resources management	20	20

E. Bank Staff		
Positions	At ICR	At Approval
Vice President:	Victoria Kwakwa	Pamela Cox
Country Director:	Michel Kerf	Ulrich Zachau
Practice Manager/Manager:	Abhas Kumar Jha	Michel Kerf
Project Team Leader:	Olivier Mahul	Olivier Mahul
ICR Team Leader:	Oliver Mahul	
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F. Results Framework Analysis

Original Project Development Objectives (from Project Appraisal Document)

The project development objective is to ascertain the viability of market-based sovereign catastrophe risk transfer instruments to reduce the financial vulnerability to natural disasters (earthquakes and tropical cyclones) of Republic of Marshall Islands, Samoa, Solomon Islands, Kingdom of Tonga, and Republic of Vanuatu. This will be achieved by providing financing to allow participating countries to join the Pacific catastrophe risk insurance pilot program and purchase catastrophe risk coverage against catastrophic earthquake and/or tropical cyclone events for the 2012-2013 and 2013-2014 pilot period.

Revised Project Development Objectives (as approved by original approving authority)

The project development objective is to ascertain the viability of market-based sovereign catastrophe risk transfer instruments to reduce the financial vulnerability to natural disasters (earthquakes and tropical cyclones) of Republic of Marshall Islands (RMI), Independent State of Samoa, Kingdom of Tonga, and Republic of Vanuatu. This will be achieved by providing additional finance to allow participating countries to join the third season of the Pacific catastrophe risk insurance pilot and purchase catastrophe risk coverage against earthquake and/or tropical cyclone events for the 2014-2015 pilot period.

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Actual Value Achieved at Completion or Target Years
Stress tests at project completion demonstrating increased fiscal resilience of the government against natural disasters	<ul style="list-style-type: none"> No comprehensive sovereign DRFI strategy in place in Pacific island countries 5 PICs with cat risk insurance (RMI, Solomon Islands, Vanuatu, Tonga, Samoa) 	3 countries with improved indicators by program end in 2015.	Catastrophe risk insurance coverage as a percentage of the contingency budget in participating countries: Cook Islands: 200% RMI: >300% Samoa: 188% Tonga: >300% Vanuatu: >300%
<ol style="list-style-type: none"> Aggregate coverage limit of the Pacific catastrophe risk insurance program; Individual coverage limit of the Pacific catastrophe risk insurance program for each participating PIC; Individual PIC's contribution toward the payment of the annual premium; Number of reports, recommendations submitted to 	<ol style="list-style-type: none"> US\$45 million for 5 PICs (RMI, Solomon Islands, Samoa, Tonga, Vanuatu) - 2013 pilot season US\$7m (Vanuatu); US\$11m (Samoa); US\$9m (Tonga); US\$7m (Solomons); US\$11m (RMI) – 2013 pilot season none – 2013 pilot season 5 Cabinet papers submitted to Council of Ministers for approval to join the pilot program 	<ol style="list-style-type: none"> US\$40 million US\$5 million per country At least US\$20,000 premium contribution from each participating PIC in pilot season 2 	<ol style="list-style-type: none"> US\$43 million for 5 PICs (RMI, Samoa, Tonga, Vanuatu, Cook Islands) 2014-2015 pilot season US\$12.7m (Vanuatu); US\$9.3m (Samoa); US\$6.4m (Tonga); US\$8.8m (RMI), US\$2.7 (Cook Islands) – 2014-2015 pilot season A US\$40,000 co-payment was paid in the 2014-2015 pilot season by RMI, Samoa, Tonga and Vanuatu. Cook Island paid their premium in full. 6 Cabinet papers submitted to Council of Ministers for approval to join the pilot program Discussed during Finance and Economic Ministers Meeting, October 2015 and 7

government for approval			national workshops and two regional workshops (since 2012) 6. Decision to establish dedicated regional entity to provide disaster and climate risk insurance to the region made during FEMM 2015.
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(b) Intermediate Outcome Indicator(s)

Intermediate Results Indicators	Actual Value of Coverage Attained		
	2013*	2013-14	2014-15
Insurance period	Jan 1 to Oct 31, 2013	Nov 1 2013 to Oct 31 2014	Nov 1 2014 to Oct 31 2015
Aggregate Premium Volume	US\$1.1 million	US\$2.1 million	US\$1.26 million
Aggregate Premium Subsidies	US\$1.1 million	US\$1.9 million	US\$1.0 million
<i>Republic of Marshall Islands</i>	US\$0.22 million	US\$0.38 million	US\$0.29 million
<i>Independent State of Samoa</i>	US\$0.22 million	US\$0.38 million	US\$0.29 million
<i>Solomon Islands</i>	US\$0.22 million	US\$0.38 million	-
<i>Kingdom of Tonga</i>	US\$0.22 million	US\$0.38 million	US\$0.29 million
<i>Republic of Vanuatu</i>	US\$0.22 million	US\$0.38 million	US\$0.29 million
<i>Cook Islands**</i>	-	US\$ 0.1 million	US\$0.1 million
Aggregate Coverage Limit	US\$45 million	US\$68 million	US\$43 million
<i>Republic of Marshall Islands</i>	US\$11 million	US\$15 million	US\$11 million
<i>Independent State of Samoa</i>	US\$11 million	US\$16 million	US\$11 million
<i>Solomon Islands</i>	US\$7 million	US\$10 million	-
<i>Kingdom of Tonga</i>	US\$9 million	US\$12 million	US\$8 million
<i>Republic of Vanuatu</i>	US\$7 million	US\$12 million	US\$10 million
<i>Cook Islands*</i>	-	US\$ 3 million	US\$3 million

*; The first pilot insurance season started on January 2013 for a period of 10 months. The following pilot seasons were from November 1 to October 31 of the following year.

** Cook Islands paid their premium in full but benefited from the risk pooling effect and their coverage was included in the aggregate coverage limit as such.

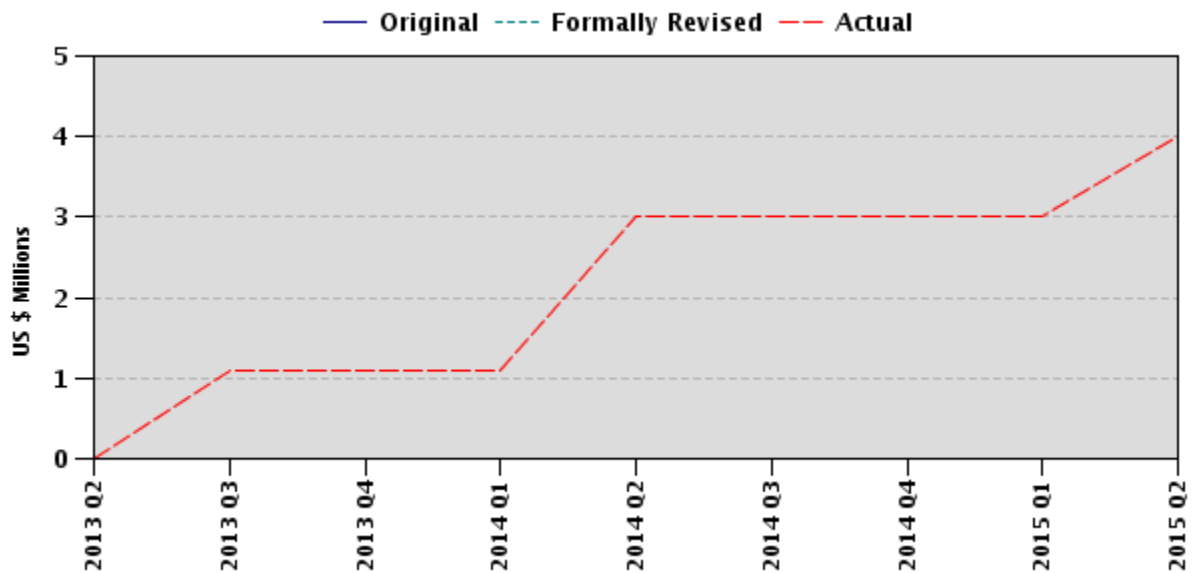
G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	02/09/2015	Highly Satisfactory	Highly Satisfactory	4.00

H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in millions USD	Reason for Restructuring & Key Changes Made
		DO	IP		
09/26/2014	n/a			3.00	Additional financing; extension of closing date; change to the PDO.

I. Disbursement Profile



1. Project Context, Development Objectives and Design

1.1 Context at Appraisal

Pacific Islands are highly exposed to adverse natural events (including tropical cyclones, earthquakes, volcanic eruptions, and tsunamis), which can result in disasters affecting their entire economic, human, and physical environment and impact their long-term development agenda. From 1950 to 2009, storm and earthquake damage cost the Pacific Island Countries (PICs) an estimated US\$7.2 billion (World Bank 2010).

At appraisal, critical challenges confronting the governments of the Pacific Islands in the aftermath of a disaster included the need for immediate liquidity for emergency response and maintaining essential government services until additional resources became available. The Pacific Islands were restricted in their options for rapid response financing post-disaster as they were constrained by their size and borrowing capacity and had limited access to international insurance markets. In the absence of easy access to debt and well-functioning insurance markets, a large portion of the economic losses stemming from adverse natural events are borne by governments and households.

Natural disaster impacts were identified in the World Bank's Regional Engagement Framework FY2006-2009 for Pacific Islands¹ as a key contributor to the high percentage of populations living below the poverty line and stagnant growth performance exhibited by PICs in recent years. Disasters severely impact households and livelihoods, resulting in additional people falling into poverty. These impacts are exacerbated where governments experience a lack of liquidity for response and recovery in the aftermath of a disaster, due to the impacts of delayed response on vulnerable populations and the diversion of funds from priority development initiatives.

Sovereign disaster risk finance offers a set of ex-ante and ex-post financial tools to improve the government's financial resilience and rapid response capacity against natural disasters. Disaster Risk Financing and Insurance (DRFI) has gained increasing recognition in recent years and is a key activity of the Hyogo Framework for Action (HFA) Priorities for Action 4 and 5.² The HFA is a result-based plan of action adopted by 168 countries to reduce disaster risk and vulnerability to natural hazards and to increase the resilience of nations and communities to disasters over the period 2005–2015. In the Pacific, the HFA formed the basis for the development of the Pacific Disaster Risk Reduction and Disaster Management Framework for Action (Regional Framework for Action, or RFA). The HFA Framework was succeeded by the Sendai Framework for Disaster Risk Reduction in 2015 which still highlights the need for disaster risk financing under priority 3; Investing in disaster risk reduction for resilience.

¹ Report No: 32261-EAP, May 3 2005

² Priority for Action 4—"Reduce the underlying risk factors"—has an associated key activity of financial risk-sharing mechanisms, such as insurance, while Priority for Action 5—"Strengthen disaster preparedness for effective response at all levels"—includes the establishment of emergency funds such as contingency budget, national reserves, and annual budgetary allocations. See UNISDR (2005).

The RFA in the Pacific cites DRFI activities as a key national and regional activity. Theme 4—“Planning for effective preparedness, response and recovery”—has an associated key national activity, “Establish a national disaster fund for response and recovery.” Theme 6 of the RFA—“Reduction of underlying risk factors”—cites the development of “financial risk-sharing mechanisms, particularly insurance, re-insurance and other financial modalities against disasters” as both a key national and regional activity (SOPAC³ 2005). The RFA was adopted during the regional disaster managers meeting in 2006 and all PICs now have their own national Disaster Risk Management (DRM) plans aligned to the RFA.

Studies by the Secretariat of the Pacific Community (SPC) (2011 and 2012) looked at the fiscal impact of past disasters in selected PICs and demonstrated the financial constraints in post-disaster budget reallocation and build a case for establishing national reserves. Whilst international assistance always plays a valuable role, over-dependence on this as a source of financing carries disadvantages. International aid can be uncertain, inhibits contingency planning, and it can be slow to materialize. The PICs currently have limited access to ex ante disaster risk financing instruments. Some of them, like RMI and Solomon Islands, have an annual budget allocation. Others, like Tonga and Vanuatu, have set up national reserve funds. Finally, some PICs like Samoa purchase property insurance for their critical public assets. Overall, the PICs still mainly depend on financing from international donors to fund post-disaster needs.

This project was for the provision of premium finance. However, it formed an integral part of a broader Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) Program (TF071772). The PCRAFI was a Pacific region-wide program established in 2007 by joint initiative of the World Bank, SOPAC’s Applied Geoscience and Technology Division, and the Asian Development Bank (ADB) with financial support from the Government of Japan, the Global Facility for Disaster Reduction and Recovery (GFDRR), the European Union (EU) and with technical inputs from GNS Science of New Zealand, Geoscience Australia and AIR Worldwide. It aimed to provide a full spectrum of both financing and physical disaster risk management tools to PICs. PCRAFI was designed to develop the capacity of PICs to manage all levels of disaster risk through a combination of financial and physical disaster mitigation measures. In addition to the risk financing application funded under this project, a series of applications were developed under the PCRAFI to offer the PICs support on disaster risk management and climate change adaptation and urban/infrastructure planning. These activities have been completed under PCRAFI and are being further strengthened through the Pacific Resilience Program (PREP) which succeeded the DRM component of PCRAFI in 2015. Under the PREP countries use part of their IDA allocation to finance a portion of their premium accompanied by an increasing allocation from their national budgets. This means that the only remaining part of the original PCRAFI program is now the disaster risk financing and insurance component including its associated catastrophe risk insurance program. These activities will continue and expand under PCRAFI Phase II for which a new programmatic Multi-Donor Trust Fund (MDTF) (TF072622) has been established to continue work on disaster risk finance.

³ South Pacific Applied Geoscience Commission

The original duration of the project was from November 16, 2012 until January 15, 2015. In order to finance one more year of pilot implementation, the project was restructured on September 26, 2014 and the closing date was extended until January 31, 2016.

1.2 Original Project Development Objectives (PDO) and Key Indicators (*as approved*)

The original PDO was “to ascertain the viability of market-based sovereign catastrophe risk transfer instruments to reduce the financial vulnerability to natural disasters (earthquakes and tropical cyclones) of Republic of Marshall Islands, Samoa, Solomon Islands, Kingdom of Tonga, and the Republic of Vanuatu. This will be achieved by providing financing to allow participating countries to join the Pacific catastrophe risk insurance pilot program and purchase catastrophe risk coverage against catastrophic earthquake and/or tropical cyclone events for the 2012-2013 and 2013-2014 pilot period.”

Since this project was for premium finance a singular Key Performance Indicator (KPI) was used, that being a “Country is eligible for catastrophe risk payment and has received payment in case of a covered (insured) event”.

1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification

The PDO was revised in September 2014 as follows: “to ascertain the viability of market-based sovereign catastrophe risk transfer instruments to reduce the financial vulnerability to natural disasters (earthquakes and tropical cyclones) of Republic of Marshall Islands, Independent State of Samoa, Kingdom of Tonga, and Republic of Vanuatu. This will be achieved by providing additional finance to allow participating countries to join the third season of the Pacific catastrophe risk insurance pilot and purchase catastrophe risk coverage against earthquake and/or tropical cyclone events for the 2014-2015 pilot period.”

The PDO was revised to extend the pilot for a third season (from November 2014 to October 2015), and to drop the Solomon Islands which did not join the third pilot season.

The KPI remained the same.

1.4 Main Beneficiaries

The main beneficiaries of the project were the governments of the five participating PICs: Republic of Marshall Islands, Samoa, Solomon Islands, Kingdom of Tonga, and Republic of Vanuatu. They collectively benefited from:

- (a) the ability to transfer of a portion of their tropical cyclone and earthquake risk to the international reinsurance market, made feasible by financial assistance for premiums, the group nature of the transaction, and the role of the World Bank Treasury in intermediating the market-based cat risk transfer transaction; and,
- (b) capacity building in disaster risk finance and public financial management of natural disasters (under a complementary non-lending technical assistance project

Pacific Disaster Risk Financing and Insurance Pilot (P130347), which was also funded through TF071772 with completion date of August 31, 2016);

The indirect beneficiaries are the population of the participating countries, who will ultimately benefit, in the case of an insured event, from the rapid response of the government financed by the insurance payout.

1.5 Original Components (*as approved*)

The pilot had one component, for a total cost of US\$3.1million, of which US\$3 million was covered by the grant and the participating countries contributed US\$20,000 each. The Pacific catastrophe risk insurance pilot project aimed to test the viability of catastrophe risk transfer instruments for the participating Pacific islands as a source of limited but immediate funding post-disaster.

The policies were designed to ensure speed of payout, and were triggered by modelled emergency losses calculated using an event footprint instead of actual losses incurred. In the aftermath of a disaster, an independent modelling firm would undertake a calculation within 10 business days of receiving a calculation notice. This calculation would determine whether there would be a payout (and its amount) or not.

The project consisted of two annual premium payments from the countries to secure access to catastrophe risk insurance against tropical cyclones and earthquakes. See Table 1 below.

Table 1. Annual Catastrophe Risk Premium

Countries	Year 1 (2013)	Year 2 (2013-14)
Marshall islands	US\$0.22 million	US\$0.40 ⁴ million
Samoa	US\$0.22 million	US\$0.40 million
Solomon Islands	US\$0.22million	US\$0.40 million
Tonga	US\$0.22 million	US\$0.40 million
Vanuatu	US\$0.22 million	US\$0.40 million

The financing was provided in two installments issued to the World Bank Treasury from International Development Association (IDA) via a signed hedge request from the PICs. The hedge request provided the World Bank Treasury with the authority to act as intermediary and place the transaction on the market. Prior to this the funds were transferred from the Pacific Disaster Risk Finance and Insurance Program Multi-Donor Trust Fund (MDTF) TF071772 to each country's IDA account. This enabled the funds to be withdrawn from each country's national IDA account by the Ministry of Finance (MoF) and transferred to World Bank Treasury. The payment of the annual catastrophe risk premium would be made in January 2013 (for the Jan-Oct 2013 pilot period) and October 2013 (for the 2013-2014 pilot period).

⁴ This includes the US\$20,000 co-payment made by each of the countries from their national budget.

1.6 Revised Components

N/A

1.7 Other significant changes

Additional Financing of US\$1 million was granted by the Government of Japan on September 26, 2014, and the total project funds rose from US\$3m to US\$4m. The four participating PICs - Republic of Marshall Islands, Independent State of Samoa, Kingdom of Tonga, and Republic of Vanuatu – also provided a nominal contribution of US\$40,000 each from their own budget towards the payment of catastrophe risk insurance premiums. The grant of US\$1 million from the Government of Japan was transferred from the Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries Trust Fund (TF072129) to the Pacific Disaster Risk Finance and Insurance Program Multi-Donor Trust Fund (MDTF) TF071772 and subsequently to the IDA account at the request of each country's Ministry of Finance. The payment of the catastrophe risk premium was made in October 2014. In addition, Cook Islands continued to participate in the pilot and paid its own premium in full.

Solomon Islands decided to withdraw after the second year of the insurance pilot. In 2013, the Santa Cruz earthquake and tsunami in the Solomon Islands did not result in a payout (the level of physical damage caused by this event was relatively low). Similarly, the flooding in the Solomon Islands in March 2014 did not result in a payout as floods were caused by a tropical depression, which did not qualify as an eligible event under the pilot (only events qualified as tropical cyclones by the Joint Typhoon Warning Center are eligible under the insurance policy). Neither event resulted in major losses that significantly disrupted the economy or the government. These two events demonstrated that there was a need to complement catastrophe risk insurance with other financial solutions to cover more frequent, less severe events.

2. Key factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

This project was solely for the payment of insurance premiums. The associated design of the Pacific catastrophe risk insurance project (implemented via P130441) incorporated international experience in developing catastrophe insurance programs such as the Turkish Catastrophe Insurance Pool (TCIP), the Caribbean Catastrophe Risk Insurance Facility (CCRIF), Malawi weather derivatives, and the Southeast Europe and Caucasus Regional Catastrophe Risk Insurance Facility (SEEC CRIF).

The pilot program prioritized the low-income PICs that were already active in disaster risk management and willing to further enhance their budget planning against natural disasters. Five countries participated at project start-up in 2012: the Marshall Islands, Samoa, the Solomon Islands, Tonga, and Vanuatu.⁵

⁵ A letter of confirmation of interest, signed by the Minister of Finance, was received from each of the five participating PICs.

A detailed, quantitative understanding of potential costs to the fiscal budget from disasters was critical to allow for the design of the catastrophe risk insurance product and its sound pricing. It also allowed the government to better assess their broader fiscal exposure to natural disasters. A lack of clear definition of the contingent liability of the government to natural disasters combined with lack of fiscal data on the cost of past disasters made this analysis difficult. However, the catastrophe risk model (developed under a separate project) allowed for an estimated cost of disasters for the whole country and for the government.

The catastrophe risk insurance product was designed to cover only a small portion of the cost of disasters (different instruments are suitable for different layers of risk) and to provide immediate liquidity to countries and serves as bridge financing while other funds are mobilized. As such it offered an incomplete coverage against natural disasters. This project was an opportunity to work with the countries on the design of an integrated disaster risk finance strategy.

Capacity building on disaster risk financing and insurance (DRFI) was essential to build political imperative to engage in the DRFI agenda for the pilot and beyond, and to allow countries to make informed decisions on coverage selection and overall pilot participation. In particular, the selection of the insurance coverage (perils to be covered, attachment points, exhaustion points) by the governments was done through intensive capacity building and facilitated by the development of a financial (Excel) tool allowing the user to understand the trade-off between the various insurance parameters.

2.2 Implementation

The project was approved in January 2013, with an original closing date of January 15, 2015. The project initially implemented two pilot seasons (Jan-Oct, 2013; Nov 2013 – Oct 2014) in five participating PICs. The Cook Islands joined the pilot for the second season (2013-2014), paying its own premium in full.

The first pilot season was delayed. It started on January 2013 instead of November 2012 because legal documents from some participating countries were provided with delays. The pilot could not start before all countries had produced the required documentation (including the hedge request) because the reinsurance transaction was done as an aggregate portfolio to take advantage of the diversification benefits. This highlighted the need for strong discipline among the participating countries. This issue was raised among the participating countries and all deadlines were met in the subsequent pilot years. In order to realign the insurance program to the start of cyclone season, the program was renewed as expected on November 1, 2013, and on November 1, 2014.

The grant proceeds were transferred on an annual basis from the Pacific Disaster Risk Finance and Insurance MDTF to the IDA account at the request of each country's Ministry of Finance. To obtain funds, the Ministry of Finance submitted a withdrawal application

(hedge request) for the value of the premium. The payments were made in January 2013, October 2013, and October 2014.

During the Forum Economic Ministers Meeting in July 2014 the Ministers of Finance of the participating PICs requested the extension of the Project for one more season to allow the PICs to further discuss the continuation of the program and its management structure to ensure its sustainability beyond the pilot phase. The Additional Financing was US\$1 million from a grant from the Government of Japan.

Participating countries agreed to increasingly co-finance their premium. Each of the four participating countries provided co-financing of US\$20,000 (or 5 percent of the total premium) in 2013-14 and of US\$40,000 (or 14 percent of the total premium) in 2014-15. Cook Islands paid their premium in full.

The pilot insurance program made two payouts for an aggregate amount of US\$3.2 million within 10 days after the disasters. Tonga received a payout of US\$1.3 million following Tropical Cyclone Ian in January 2014. Vanuatu received a payout of US\$1.9 million following Tropical Cyclone Pam in March 2015. The payouts were among the first injections of cash received in the immediate aftermath of the disaster.

On January the 11th 2014, Tropical Cyclone Ian devastatingly hit Tonga as it passed close to the Vava'u island group and made landfall on the islands of Ha'apai. The cyclone had intensified to Category 5 before landfall, and its arrival led the Prime Minister of Tonga to declare a state of emergency for Vava'u and Ha'apai. The cyclone resulted in the damage or destruction of more than a thousand buildings in Ha'apai and reports of significant damage to infrastructure and agriculture across the worst affected islands. More than two thousand people sought refuge in evacuation centers. On January 13th, an event calculation notice was sent to the Calculation Agent for the Pacific Catastrophe Insurance Pilot; AIR Worldwide. AIR Worldwide performed a calculation of the modelled losses from the event under the terms of the pilot, and on January 20th a Calculation Report was sent to the pilot counterparties to notify them that the modelled loss was large enough to trigger a payout for Tonga under the policy. A payout of \$1.27 million was made to Tonga under the policy on the January 27th; an amount equivalent to more than the country's 2013 contingency budget, and more than half of the reserves of the Tonga National Reserve Fund. The payout from Tropical Cyclone Ian was the first under the pilot, and it successfully demonstrated the core principal of rapid disbursement anticipated under the program. The entire process, from calculation notice to receipt of funds was executed in under three weeks.

Tropical Cyclone Pam that hit Vanuatu on March 13, 2015 triggered an insurance payout of US\$1.9 million for the Government of Vanuatu. This insurance payout provided the Government of Vanuatu with rapid cash injection in their budget. As a comparison, this insurance payout amount is equivalent to 8 times their emergency provision. Following the Calculation Notice sent to AIR Worldwide by WB/IDA on March 14, the Calculation Report, which includes the calculation of the insurance payout amount, was released on March 20 and the payout was received by the Government of Vanuatu on March 21, 2015. The insurance payout is consistent with the severity of the loss and the contract selected by the Government of Vanuatu. First, while the intensity of the tropical cyclone reached

Category 5 (and was estimated to have return period of 150 years), the eye of the tropical cyclone passed 45 km away from the capital city and hence did not generate damage as if it would have hit the capital city. The damage loss was estimated to have a return period of 40 years. Interestingly, the modeled physical losses estimated from the catastrophe risk model within 6 days after the event were commensurate with the estimated damage from the post-disaster loss assessment conducted a month later (US\$182m vs US\$220m). The relatively low premium is mainly due the fact that Vanuatu had a relatively low coverage (given that their premium was not very high).

The Solomon Islands suffered a magnitude 8.0 earthquake during the term of the pilot which caused loss of life and damage to local infrastructure but did not generate a payout under the pilot. The earthquake occurred far from the economic center of the Solomon Islands, which meant that the impact on core Government services and the economy of Solomon Islands and its future economic development was limited. However, the Government of Solomon Islands did experience significant travel costs (due to the remote location) associated with the relief efforts. Although the pilot functioned as expected under the conditions of the earthquake, this case demonstrated the need for countries to use a comprehensive mix of financing sources to manage disaster losses. A similar point was demonstrated in April 2014, when flash flooding affecting Honiara, Guadalcanal, Isabel, Malaita and Makira-Ulawa in the Solomon Islands caused damage and loss of at SBD787.3 million (US\$107.8 million) equivalent to 9.2 percent of GDP. A slow moving tropical depression caused persistent heavy rains with over 732mm of rainfall recorded over four days at the Honiara rain gauge. These floods caused 22 fatalities across the country, internally displacing some 10,000 people initially and affecting approximately 52,000 people in total. The flooding caused damage to major infrastructure, fully destroying some 675 houses and their food gardens, which many people depend upon for their livelihood. Under the conditions of the pilot, the event did not trigger a payout. This was due to the impact of the category of the storm on the policy response; a tropical depression as opposed to a categorized tropical cyclone. As a consequence, Solomon withdrew from the pilot catastrophe risk insurance program in 2014.

The pilot demonstrated that a well-structured and diversified portfolio of catastrophe risk is attractive to the private reinsurance market, as it offers them the opportunity to diversify their own portfolio, which is mainly concentrated in peak risks like Florida cyclones or Japan earthquake. Premium rates, compared to the underlying risk, were very competitive compared to similar transactions.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

The M&E framework was designed in collaboration with the governments. The Results Framework as detailed in Annex 2 was overall well designed although some indicators were more about the design of the pilot insurance program, which were slightly outside the scope of this project (designed to provide premium financing). However the design of the pilot and the premium financing were so intimately related that it made sense to select such indicators.

Stress tests demonstrating the increase in fiscal resilience of the governments against natural disasters were difficult to design in order to offer a comprehensive assessment of the increased fiscal resilience as some outputs were related to improved institutional framework that are difficult to quantify. As a consequence, the stress tests were designed to measure the additional budget flexibility offered by the aggregate catastrophe risk insurance coverage (that is, the maximum insurance payout) as a percentage of their contingent budget. See Table 2 below. This ratio is close to or exceeds 200 percent for all participating PICs.

Table 2. Ex ante financing instruments in selected Pacific Island Countries

	RESERVE FUND (US\$ thousands)	CONTINGENCY BUDGET AS % OF TOTAL APPROPRIATIONS	SELECTED LAYER OF COVERAGE FOR SOVEREIGN (PARAMETRIC) CATASTROPHE RISK INSURANCE	MAXIMUM PAYOUT COVERAGE FROM PACIFIC CATASTROPHE RISK INSURANCE PILOT AS % OF CONTINGENCY BUDGET	TRADITIONAL DISASTER INSURANCE
Cook Islands	409	1.50%	Low	200%	Government and SOEs
Fiji	1,600	Discretionary	-	-	SOEs
Marshall Islands	1,500	US\$200,000	Medium	>300%	Government and SOEs
Samoa	Needs basis	3%	High	188%	Government and SOEs
Solomon Islands	-	2.50%	-	-	SOEs
Tonga	2,400	5%	Low	>300%	SOEs
Vanuatu	256	1.50%	High	>300%	SOEs

Source: World Bank (2015c)

The performance targets were met and even exceeded.

2.4 Safeguard and Fiduciary Compliance

Safeguards. This was a Category “C” project as no safeguards were triggered. This was confirmed in the Integrated Safeguards Data Sheet (report No. 73103 which was disclosed to the public in Washington, D.C. on 11/8/2012). This categorization did not change for the extension and additional financing of the project.

Fiduciary. Due to the specifics of the implementation arrangements, many standard fiduciary requirements and procedures did not apply to the project. The only contracts financed were the catastrophe swaps with IDA, so there was no need for a procurement plan. The countries’ participation in the project’s financial management was limited to the annual submission of a withdrawal application requesting direct payment to IDA and co-payments in 2013 and 2014 of US\$20,000 and US\$40,000 respectively. The Ministries of

Finance of the respective countries had sufficient capacity to do so. The project team closely monitored the project implementation process to ensure that payments were requested and transferred on time. All policies were complied with.

2.5 Post-completion Operation/Next Phase

Under the Pacific Resilience Program (PREP) (P154839, PAD1095) which became effective on October 30, 2015, premium financing is now provided by IDA with US\$0.5 million per year for three years for four countries (Tonga, Samoa, Vanuatu and Marshall Islands) to provide insurance coverage against tropical cyclones and earthquakes/tsunamis until 31st October 2018.

The PCRAFI program (phase II) is under development and the project concept note the new MDTF (TF072622) was approved on April 19, 2016 (TFP 2080). The program aims to build the financial response capacity of PICs against natural and climatic disasters by providing parametric insurance solutions as a means of accessing quick injection of liquidity to remove the need for budget reallocation in the immediate aftermath of a disaster. The program is comprised of two components (i) the establishment of the PCRAFI Facility that will provide insurance solutions to the PICs; and, (ii) the provision of technical assistance to build institutional capacity on the public financial management of natural disasters and insurance. These components will be implemented by a combination of recipient executed and bank executed projects. Phase II of the PCRAFI program and builds upon the original PCRAFI which was launched in 2007 and aimed to provide the PICs with disaster risk management assessment and financing tools. The PCRAFI program (Phase II) is also fully aligned with the regional programmatic approach Building Climate and Disaster Resilience in the Pacific and the Pacific Resilience Program.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

Relevance of Objective. Rating: Substantial.

The PDO was to ascertain the viability of market-based sovereign catastrophe risk transfer instruments to reduce the financial vulnerability of PICs from natural disasters. The project was designed to provide premium financing to participating PICs. As such, its development objective was to enable the access of PICs to efficient sovereign catastrophe risk insurance coverage associated with tropical cyclones and earthquakes.

The pilot made two payouts for an aggregate amount of US\$3.2 million, both occurring within 10 days of the disasters. Tonga received a payout of US\$1.3 million following Tropical Cyclone Ian in January 2014. Vanuatu received a payout of US\$1.9 million following Tropical Cyclone Pam in March 2015. The immediate infusion of cash enabled the governments to start recovery efforts quickly, limiting the liquidity impact on the government budget by providing cash to pay for fuel in Tonga to support the mobilization of relief and the transportation of nurses to affected rural areas in Vanuatu.

Relevance of the Design and Implementation. Rating: High

The project was consistent with the World Bank's strategy to promote innovative insurance products to spread and manage risk. The background document "New World, New World Bank Group: Post Crisis Directions" prepared for the Development Committee Meeting of April 25, 2010 identified as one of the five WBG strategic priorities "manage and prepare for crises", and states that the WBG's future work under this strategic priority would focus on "designing innovative finance and insurance products to spread and manage risk" (p.26, para. 61). It was also aligned to the WBG Climate Change Action Plan and its priority on "Leave No One Behind", particularly paragraph 110 which states that the WBG will "scale up sovereign disaster risk insurance" (mention links to Small Island States Resilience Initiative). Similarly the project was aligned to the capacity building activities of the Small Islands States Resilience Initiative mentioned in paragraph 112.

The PCRAFI MDTF contributes to the World Bank **twin goals**, given the fiscal constraints faced by the participating countries to manage natural disasters, economic shocks, and climate change. The immediate infusion of cash enabled the governments to start recovery efforts quickly, limiting the liquidity impact on the government budget by providing cash to pay for fuel in Tonga to support the mobilization of relief and the transportation of nurses to affected rural areas in Vanuatu. This injection of liquidity also helped prevent the diversion of budget reallocations away from key development projects for the countries. In its turn it helped reduce the negative impact on long term economic growth from natural and climatic disasters hence contributing to the twin goals of ending poverty and boosting shared prosperity.

3.2 Achievement of Project Development Objectives, Rating: Substantial

The PDO was achieved. The viability of market-based instruments relies on the joint viability of the supply of the product and its demand. On the supply side, the project demonstrated that the private reinsurance market is willing to provide coverage at a competitive price if the portfolio of risks is transparent, well-structured and well diversified. On the demand side, the participating countries showed strong commitment and willingness to join the program and to contribute to the payment of the premium: up to US\$40,000 (or 14% of the total premium) for 4 PICs, and Cook Islands financed their premium in full. However, IDA countries may need financial assistance from external partners to finance their premium given their budget constraints.

3.3 Efficiency. Rating: Substantial

The insurance payouts were the first injections of cash received by the governments in the immediate aftermath of a disaster. Vanuatu received its payout within 7 days of being affected by the tropical cyclone, and Tonga received its payout within 10 days.

3.4 Justification of Overall Outcome. Rating: Satisfactory

Overall Outcome rating is satisfactory. The project was successful in providing cost-effective access to market-based catastrophe risk insurance coverage to the participating PICs and ensuring timely payment of insurance payout following and (insured) event. As such, it demonstrated the viability of market-based catastrophe risk insurance products, as defined in the PDO. For IDA countries, given their limited financial capacity, external financing may be needed to help them pay their insurance premium.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

While these impacts were not monitored, the project is perceived to have had a positive indirect impact on poverty and social development. This was demonstrated by the payouts made to Tonga and Vanuatu which served to improve their ability to meet the needs of their most vulnerable population in the aftermath of a major natural disaster. The immediate infusion of cash enabled the governments to start recovery efforts quickly, limiting the impact on the government budget by providing cash to pay for fuel in Tonga to support the mobilization of relief and the transportation of nurses to affected rural areas in Vanuatu.

The project did not directly track gender disparities in disaster impacts.

(b) Institutional Change/Strengthening

N/A

(c) Other Unintended Outcomes and Impacts (positive or negative)

N/A

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

N/A

4. Assessment of Risk to Development Outcome

Rating: Substantial

The Risk to development outcome should be assessed from the perspective of whether this project has enabled the development of a viable market-based sovereign catastrophe risk insurance mechanism for PICs. This is an ambitious objective given that the PICs has been relying extensively on post disaster donor assistance and, therefore, the shift from crisis responder to risk manager, including the use of market-based financial solutions, is a long term effort.

In the context, the future for viable market-based catastrophe risk insurance solutions is closely linked to the implementation of financial risk management strategies to deal with natural disasters. Participating PICs has demonstrated increased interest to improve their financial protection against disasters, and especially their rapid response financing capacity

beyond donor assistance. The upcoming establishment of a dedicated insurance facility owned and managed by the PICs will another sign of their commitment to make this program viable. But the financing of their annual insurance premium, in the context of tight budgets, create some uncertainty that may jeopardize the viability of such financial instruments.

For the above reasons, the overall risk is rated “Substantial”.

5. Assessment of Bank and Grantee Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry

Rating: Satisfactory

The project was a collaborative effort between the PICs, the donors, in particular Government of Japan, and the World Bank.

The decision to transfer the risk in the form of a catastrophe swap was driven by multiple factors. First, at the 2011 World Bank/IMF Annual Meetings, the participating countries asked for the World Bank to be involved in the transaction, as they felt they lacked experience accessing international reinsurance markets and dealing with sovereign disaster risk transfer more generally. Once the decision was made to have the World Bank intermediate between the countries and the market, it was necessary to use a capital markets instrument, since the World Bank could not underwrite insurance policies. The transaction was therefore executed as a financial derivatives contract – catastrophe swap. The World Bank had some experience with such transactions, and as the product did not require collateralization (as a catastrophe bond would) and allowed use of standard documentation prepared by the International Swaps and Derivatives Association (ISDA) as the basis for negotiation, a catastrophe swap was the most effective product to implement.

The project was a cross GP collaboration between, GSURR, GENDR, GFM3A, LEGES and TRE to provide a regional programmatic approach on disaster risk management and financing to those countries facing high levels of disaster risk. The primary implementing agencies were GFM3A via the Disaster Risk Finance and Insurance Program who were responsible for overall project management. Treasury served to intermediate the financial transaction with the international reinsurance market with assistance from GFM3A who provided actuarial advice in this regard. LEGES were responsible for the issuance of insurance contracts with the countries following the outcome of the approach to market. Meanwhile GENDR managed the contractual arrangements with the calculation agent while GSURR participated in the original data collection which underpins the model used for calculation. Overall the various units of the World Bank worked well; however, due to the innovative nature, internal delays in processing led in part to the delay of the implementation of the insurance by three months. This was improved and no delays were experienced in the two following years.

(b) Quality of Supervision
Rating: Highly Satisfactory

Due to the specifics of the implementation arrangements and the fact that this project was only for premium finance, many standard fiduciary requirements and procedures did not apply to the project. The only contracts financed were for the purchase of catastrophe swaps using IDA funds, so there was no need for a procurement plan. The project team closely monitored the implementation process ensuring that payments were requested and transferred on time.

(c) Justification of Rating for Overall Bank Performance
Rating: Satisfactory

Transactions were placed and completed in a timely. Cost of insurance is estimated to be at least 50 percent lower than similar transactions where the PICs would have accessed the reinsurance market individually. Insurance payouts were made within two weeks.

5.2 Grantee Performance

(a) Government Performance
Rating: Satisfactory

Participating countries received premium support grants through funding from the Government of Japan. Premiums for the first pilot season were fully covered by the grants. For the second pilot season (2013–14), participating countries made a nominal contribution of US\$20,000 each to the cost of premiums, except for the Cook Islands, which paid its premium in full. The country premium contribution was increased to US\$40,000 each for the third season of the pilot (2014-15); the Cook Islands opted to participate again in the third year and again paid the full amount of its premium.

Although the contribution from the majority of countries accounted for only a small part of the total premium cost (5 percent in the second season pilot season and 14 percent in the third pilot season), it was an important demonstration of demand for the program and countries' commitment to participate. Payment of premiums for the second and third year of the pilot was complicated by the introduction of this additional source alongside the trust fund established for the Government of Japan's contributions. In particular, it took extra time for countries to carry out the additional administrative requirements involved in transferring funds to the World Bank—a change that had to be accounted for in the process of executing the contracts before the inception date of the coverage.

(b) Implementing Agency or Agencies Performance
Rating: N/A

(c) Justification of Rating for Overall Grantee Performance

Rating: Satisfactory.

All hedge requests were submitted in a timely fashion to ensure the transactions went ahead according to schedule. There was only a slight delay at the inception of the pilot, which led to a start date of January 2013 instead of November 2012.

6. Lessons Learned

The following are the key lessons learned from this project. Since this project is part of the larger PCRAFI program that helps countries increase their financial resilience to natural disasters, these lessons relate to the program as a whole.

Catastrophe risk insurance can provide quick payouts in the wake of a major disaster.

The project has made two payouts for an aggregate amount of US\$3.2 million within 10 days after the disasters. Tonga received a payout of US\$1.3 million following Tropical Cyclone Ian in January 2014. Vanuatu received a payout of US\$1.9 million following Tropical Cyclone Pam in March 2015. The payouts were the first injections of cash received in the immediate aftermath of the disaster. Vanuatu received their payout within 7 days of being affected by Tropical Cyclone (TC) Pam; similarly Tonga received their payout within 10 days. The Pilot demonstrated its very purpose to provide quick, but limited, cash injection in the aftermath of a major disaster to finance immediate expenditures faced by the governments.

Catastrophe risk insurance cannot cover all disaster losses and should be combined with other financial solutions.

The catastrophe risk insurance pilot supported by the project was not designed to cover the government against all disaster losses; instead, it was intended to cover some portion of the losses from major disasters caused by tropical cyclones, earthquakes and tsunamis that may disrupt the operations of the central government and the provision of basic public services. The Santa Cruz earthquake in February 2013 (where the level of physical damage caused by this event was relatively low) and the flooding in March 2014 (where losses were caused by a tropical depression, which does not qualify as an eligible event under pilot) in the Solomon Islands did not result in a payout. These two events demonstrate that there is a need to complement catastrophe risk insurance with other financial solutions to cover more frequent, less severe events. The Pacific DRFI program provides the PICs with technical assistance to help them develop an integrated DRFI strategy in order to increase their post-disaster financial response capacity.

Catastrophe risk insurance products could be refined to allow for more comprehensive coverage.

Market-based catastrophe risk insurance products rely on parametric triggers to allow for rapid claims settlement. Softer triggers, like a declaration of natural disasters by the affected country, could be considered to allow the PICs to access immediate but limited funds post disaster. However, such triggers may not be accepted by the private reinsurance market in the short term and would require dedicated regional funds.

The pooling of country catastrophe risks and its placement through an aggregate portfolio resulted in a significant reduction in premium for the participating PICs.

The pilot has demonstrated that the international reinsurance market is not only willing to supply catastrophe risk insurance to the PICs but to do so at competitive prices. The

country-specific catastrophe risk insurance policies pooled and placed on the international reinsurance market as a single portfolio took advantage of regional risk diversification benefits and regional economies of scale (see table 4). It is estimated that each participating PIC gained a 50 percent reduction in premiums as a result of the portfolio approach versus an individual country approach.

However, this joint approach requires strong discipline and coordination among participating countries. There are significant benefits to be gained from working together to form a risk pool. First, it creates a critical mass of business that will make the offer more attractive to the market, rather than having to deal with multiple individual policies, allowing for significant reductions in the operating costs. Second, the diversification among participating countries, as it is highly unlikely that several countries will be hit by a major disaster within the same year. This creates a more stable and less capital intensive portfolio, which is less costly to reinsure. Those benefits will translate into lower insurance premiums and/or higher insurance coverage. However, in order to reap the full benefits of regional risk pooling it is important that countries work together to ensure that all administrative steps are processed according to the agreed schedule in order to avoid any delay at the start of each year of the program. Delays from one country will create delays for all of the participating countries.

The PCRAFI program has received high-level government support. The PCRAFI program has been discussed and approved by Cabinet in the respective PICs, showing support at the highest level of Government. Support has been expressed by senior Government Officials at key international and regional meetings such as the UNISDR Global Platform for Disaster Risk Reduction, the Joint Pacific Platform for Disaster Risk Management and Climate Change and the Pacific Forum Economic Ministers Meeting.

The PCRAFI program has contributed to the improved dialogue and cooperation between Ministry of Finance and National Disaster Management Offices. The ex-ante nature of an integrated DRFI strategy has required that the ministries meet to discuss how the existing procedures can be improved and in many cases has improved their relationship. Several PICs now require the reallocation of a staff member from the Ministry of Finance to the National Disaster Management Office to manage the procurement and acquittal of relief supplies.

Further institutional capacity building on public financial management of natural disasters is required. The required development of a post disaster budget mobilization and execution document as part of the integrated DRFI strategy helps reduce the time it takes to purchase necessary relief goods and requires a detailed acquittal process on how the funds were spent. In addition, national and regional peer-to-peer DRFI workshops have been convened where countries discuss past experiences, lessons learned and how to optimize post disaster financial tools to improve post disaster budget execution. An integrated DRFI strategy should be developed which features additional financial resources, such as national reserves or contingent credit, to complement the insurance program.

The private sector has expressed interest in the country specific risk models for their own future use. The models and standards that have been established can be used by local insurance companies to build their capacity in the provision of insurance against the catastrophic perils of tropical cyclone and earthquake/tsunami. This would benefit both the public and private sector as local insurers would be in a better position to price these perils more accurately within the domestic market place. It may also help to reduce some of the post disaster financial burden on the public purse with increased uptake of insurance from private individuals.

While the PICs have demonstrated their willingness to develop a sustainable catastrophe risk insurance program, their ability to finance their premium remains a challenge. Market-based catastrophe risk insurance solutions are very new for the PICs and mark a major shift in the financial management of natural disasters, were PICs are moving from crisis responder relying heavily on donor support, to risk manager planning in advance and securing funding through market-based solutions. In this context, while countries have shown commitment to increasingly contribute to the payment of their insurance premium (using their own budget and/or IDA financing in the second phase), their ability to finance their premium remains a challenge moving forward.

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

Components	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Total Baseline Cost	3.00	4.46	
Physical Contingencies	N/A	N/A	
Price Contingencies	N/A	N/A	
Total Project Costs	3.00	4.16	
Project Preparation Costs	N/A	N/A	
Total Financing Required	3.00	4.46	

(b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Trust Funds		3.00	4.00	100

Annex 2. Outputs by Component

Pacific Disaster Risk Financing and Insurance Program: Aggregate results framework (since 2012)				
Impact	Indicators	Baseline (2013)	Target	Progress
To increase the financial resilience against natural disasters and improve the capacity to meet post-disaster funding needs without compromising fiscal balances	Stress tests at project completion demonstrating increased fiscal resilience of the government against natural disasters	<ul style="list-style-type: none"> No comprehensive sovereign DRFI strategy in place in Pacific island countries 5 PICs with cat risk insurance (RMI, Solomon Islands, Vanuatu, Tonga, Samoa) 	<ul style="list-style-type: none"> 3 countries with improved indicators by program end in 2015. 	Catastrophe risk insurance coverage as a percentage of the contingency budget in participating countries: Cook Islands: 200% RMI: >300% Samoa: 188% Tonga: >300% Vanuatu: >300%
Outcomes	Indicators			Progress
Improved perception and understanding of the economic and fiscal impact of natural disasters	<ol style="list-style-type: none"> Number of countries where project has contributed to initiate active dialogue on risk financing Number of countries where dialogue is evidence based (e.g. through economic and fiscal impact assessments) Number of countries that have embedded project's DRFI framework into public financial management 	<ol style="list-style-type: none"> 5 countries with dialogue started; 5 countries have assessed the financial impact of natural disasters on the whole economy 5 countries (through their cat risk insurance coverage) 	<ol style="list-style-type: none"> 5 countries with dialogue is evidence-based 5 countries where governments have embedded DRFI into public financial management 	<ol style="list-style-type: none"> 7 DRFI Country notes produced (RMI, Solomon Islands, Samoa, Tonga, Vanuatu, Cook Islands, Fiji). A regional synthesis report has also been produced identifying scope for a regional DRFI framework 7 PICs (RMI, Solomon Islands, Samoa, Tonga, Vanuatu, Cook Islands, Fiji) assessed financial impact of disasters on whole economy 5 countries (RMI, Samoa, Tonga, Vanuatu, Cook Islands) in 2015-2016 pilot season.
Improved institutional capacity to devise and implement cost-effective financial strategies for the fiscal protection of the state against natural disasters	<ol style="list-style-type: none"> Number of countries which are eligible for catastrophe risk insurance payment and have received payment in case of a covered (insured) event Number of countries with improved fiscal resilience indicators: contingent budget (as % of total government 	<ol style="list-style-type: none"> n/a 3 countries with some domestic reserve funds 0 countries with improved strategic approach to DRFI (other than cat risk insurance) 	<ol style="list-style-type: none"> 5 countries with market-based sovereign catastrophe risk insurance coverage 5 countries with improved, strategic approach to DRFI with different tools for different risk layers 	<ul style="list-style-type: none"> 2 countries have received payouts, Tonga, in Jan 2014 and Vanuatu in March, 2015. 5 countries (RMI, Samoa, Tonga, Vanuatu, Cook Islands) have purchased cat risk insurance coverage in 2015-2016. 5 countries (Fiji, Cook Islands, Vanuatu, Tonga, Marshall Islands)

	expenditures), multi-year reserves, contingent credit, sovereign catastrophe risk insurance		3. Initial discussions with 5 PICs on the insurance for key public assets	with improved strategic approach to DRFI (other than cat risk insurance)
Outputs	Indicators			Progress
<ul style="list-style-type: none"> National strategy for the fiscal protection of the state against natural disasters Catastrophe risk insurance policies for sovereigns 	<ol style="list-style-type: none"> Aggregate coverage limit of the Pacific catastrophe risk insurance program; Individual coverage limit of the Pacific catastrophe risk insurance program for each participating PIC; Individual PIC's contribution toward the payment of the annual premium; Number of reports, recommendations submitted to government for approval 	<ol style="list-style-type: none"> US\$45 million for 5 PICs (RMI, Solomon Islands, Samoa, Tonga, Vanuatu) - 2013 pilot season US\$7m (Vanuatu); US\$11m (Samoa); US\$9m (Tonga); US\$7m (Solomons); US\$11m (RMI) – 2013 pilot season none – 2013 pilot season 5 Cabinet papers submitted to Council of Ministers for approval to join the pilot program 	<ol style="list-style-type: none"> US\$40 million US\$5 million per country At least US\$20,000 premium contribution from each participating PIC in pilot season 2 	<ol style="list-style-type: none"> US\$43 million for 5 PICs (RMI, Samoa, Tonga, Vanuatu, Cook Islands) 2015-2016 pilot season US\$12.7m (Vanuatu); US\$9.3m (Samoa); US\$6.4m (Tonga); US\$8.8m (RMI), US\$2.7 (Cook Islands) – 2014-2015 pilot season A US\$40,000 co-payment was paid in the 2015-2016 pilot season by RMI, Samoa, Tonga and Vanuatu. Cook Island paid their premium in full. 6 Cabinet papers submitted to Council of Ministers for approval to join the pilot program
Corporate scorecard				

Annex 3. Grant Preparation and Implementation Support/Supervision Processes

This project was designed specifically for payment of premiums, which is one of the components of the PCRAFI, there were no costs associated with preparation and implementation/supervision. There was a separate component on Technical Assistance that included preparation costs (P130347).

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending/Grant Preparation			
Supervision/ICR			

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
Total:		0.00
Supervision/ICR		
Total:		0.00

Annex 4. List of Supporting Documents

World Bank. 2010. “Financial Protection of the State against Natural Disasters: A Primer.” Policy Research Working Paper 5429, World Bank, Washington, DC.

World Bank. 2010. “Regional Engagement Framework FY2006-2009 for Pacific Islands.” Report No: 32261-EAP, World Bank, Washington, DC.

Pacific Catastrophe Risk and Financing Initiative (PCRAFI), www.pacris.sopac.org
Pacific Islands Applied Geoscience Commission, 2005. A Framework for Action 2005-2015: Building the Resilience of nations and Communities to Disasters, Pacific islands Applied Geoscience Commission (SOPAC), Suva, Fiji.

Applied Geosciences and Technology Division (SOPAC) Secretariat of the Pacific Community, 2011, Investment in DRM – Vanuatu, Secretariat of the Pacific Community, Suva, Fiji.

Applied Geosciences and Technology Division (SOPAC) Secretariat of the Pacific Community, 2011, Investment in DRM – Fiji, Secretariat of the Pacific Community, Suva, Fiji.

Applied Geosciences and Technology Division (SOPAC) Secretariat of the Pacific Community, 2011, Investment in DRM – Cook Islands, Secretariat of the Pacific Community, Suva, Fiji.

Applied Geosciences and Technology Division (SOPAC) Secretariat of the Pacific Community, 2011, Investment in DRM – Papua New Guinea, Secretariat of the Pacific Community, Suva, Fiji.

Applied Geosciences and Technology Division (SOPAC) Secretariat of the Pacific Community, 2012, Investment in DRM – Republic of Marshall Islands, Secretariat of the Pacific Community, Suva, Fiji.

Applied Geosciences and Technology Division (SOPAC) Secretariat of the Pacific Community, 2012, Investment in DRM – Niue, Secretariat of the Pacific Community, Suva, Fiji.

World Bank. 2012. “Pacific Catastrophe Risk Insurance Project” Integrated Safeguards Data Sheet, Report No: 73103, World Bank, Washington, DC.

World Bank. 2010. “New World, New World Bank Group: Post Crisis Directions”, DC2010-0003, World Bank, Washington, DC.

World Bank. 2015a. “Pacific Resilience Program Project” Project Appraisal Document PAD1095, World Bank, Washington, DC.

World Bank. 2015b. “Pacific Catastrophe Risk Insurance Pilot, From Design to Implementation”.

World Bank. 2015c. “Advancing Disaster Risk Financing and Insurance in the Pacific”. World Bank, Washington, DC.

Concept Review Paper from March 2012

Project Paper from October 2012

Additional Financing Memo from September 2014.

Additional Financing Project Paper from September 2014.

Trust Fund (TF071667) Administrative Agreement from November 2011.

Amendment to the Trust Fund (TF071667) Administrative Agreement from August 2015.