## PROJECT INFORMATION DOCUMENT (PID)
### APPRAISAL STAGE

<table>
<thead>
<tr>
<th><strong>Project Name</strong></th>
<th>Republic of Marshall Islands, Independent State of Samoa, Solomon Islands, Kingdom of Tonga, Republic of Vanuatu: Pacific Catastrophe Risk Insurance Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Region</strong></td>
<td>PACIFIC ISLANDS</td>
</tr>
<tr>
<td><strong>Sector</strong></td>
<td>Environment</td>
</tr>
<tr>
<td><strong>Project ID</strong></td>
<td>P133255</td>
</tr>
</tbody>
</table>

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**Environment Category**  
[ ] A  [ ] B Non-transferred [X] C  [ ] F  [ ] TBD (to be determined)

**Date PID Prepared**  
October 1, 2012

**Date of Appraisal Authorization**  
October 1, 2012

**Date of Board Approval**

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1. Country and Sector Background

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). The 8.1 magnitude earthquake followed by a tsunami that hit the Solomon Islands in April 2007, for example, caused losses estimated at 95 percent of the government budget and created a short term liquidity crunch until donor assistance arrived. More recently, the tsunami that hit Samoa in September 2009 generated damage and losses in excess of US$120 million, that is 22 percent of GDP.

The five Pacific islands involved in the proposed project are in the top 30 countries most vulnerable to natural disasters, ranked according to annual expected disaster losses scaled by gross domestic product (GDP). Vanuatu and Tonga experience the largest annual expected disaster losses with 6.6 and 4.4 percent, respectively. See Figure 1.

Critical challenges confronting the governments of Pacific Islands in the aftermath of a disaster include the need for short-term immediate liquidity for emergency response and maintaining essential government services until additional resources become available. The Pacific Islands are restricted in their options for raising quick liquidity post-disaster as they are constrained by their size and borrowing capacity and have limited access to international insurance markets. For example, the small size of Pacific Island states limits geographic diversification of risk: subsidizing affected regions using revenues from unaffected regions is impossible. High transaction costs, the inability to spread risk over a large territory, and the relatively small size of the local economy keep insurance penetration in the region to a minimum. 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 are identified in the World Bank's Pacific Regional Strategy for FY2006-2009 and the following Country Assistance Strategies as a key contributor to the high percentage of populations living below the poverty line and stagnant growth performance exhibited by Pacific Island Countries in recent years. Poor populations are less resilient than others to exogenous shocks, including natural disasters, and when shocks occur the poor tend to suffer larger damages relative to their livelihoods. This is because the poorer segments of the population often live in the most vulnerable locations and live in inadequately constructed housing. In addition, the poor have limited labor skills, fewer assets, and little or no savings. They have little opportunity for risk diversification and restricted access to credit. Because of this, they are less able to cushion the impact on consumption of disruptions to income. Exogenous shocks can also increase poverty indirectly through the effects of lower economic growth, higher inflation (the poor are more vulnerable to inflation), and through consequential lower Government spending for social services. These impacts are even 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.

Disaster impacts can also be disproportionate by gender. Woman often experience higher rates of mortality, morbidity and post-disaster diminishment in their livelihoods (World Bank 2012). In many countries vulnerable to natural disasters, traditional gender roles and disparities can make either men or women more vulnerable to the effects of the disaster. There is evidence of a number of factors leading to gendered disaster impacts in the context of Pacific Island Countries. A regional study undertaken in four Pacific Island Countries by the South Pacific Disaster Risk Program in 2002 found that men and women in Fiji, Samoa, the Solomon Islands, and Kiribati play distinct roles in preparing for disasters (SPDRP 2002). In addition, a 2004 study in Vanuatu raised concerns about the fact that decision-making in relation to resource allocation following disasters was being disproportionately dominated by men. The study also indicated that the gender imbalance in the chain of warning was resulting in higher losses as men were not efficiently warning women (Cronin et al. 2004).

The implementation of the Pacific catastrophe risk insurance project is expected to have an indirect positive impact on poverty. By providing immediate liquidity in the aftermath of a major natural disaster, the project will contribute to improving the financial response capacity of the government post-disaster, which will primarily benefit the poor population affected by a disaster. Although the project does not directly include specific features to help address the disproportionate adverse effects of disasters on women, as it focuses on the macroeconomic impact of disaster, it is part of the broader disaster risk management agenda in EAP that supports community based disaster risk management activities where the gender issues of DRM are increasingly addressed.

The regional framework for disaster risk reduction and disaster management adopted by the PICs stresses the need for innovative disaster risk financing mechanisms. The Pacific Disaster Risk Reduction and Disaster Management Framework for Action highlights the actions to be undertaken by the PICs for the implementation of the Hyogo Framework for Action 2005-2015 adapted to the Pacific. This regional framework addresses the various disaster risks facing small-island developing states and proposes both preventive and remedial actions to manage natural disaster risks. In particular, under the priority for action related to the reduction of underlying risk factors, the Regional Framework supports "the development of financial disaster
risk-sharing mechanisms, particularly insurance, reinsurance and other financial modalities for risk transfer.”

A review of the fiscal impact of past disasters in selected PICs shows very limited flexibility in post-disaster budget reallocation and heavy dependence on post-disaster donor assistance. Whilst international assistance will always play a valuable role, over-dependence on this as a source of financing carries disadvantages. International aid can be uncertain, which inhibits contingency planning, and it can be slow to materialize. The Pacific islands 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 purchase property insurance for their key public assets. Pacific Island countries still mainly depend on financing from international donors to fund post-disaster needs.

The Pacific catastrophe risk insurance pilot program will form part of broader World Bank support to the PICs in the development of a comprehensive program on disaster risk management and climate change adaptation in the Pacific that includes policy advice, sector work and technical assistance, and investment operations. The proposed project is an integral part of a broader Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI). This PCRAFI is a Pacific region-wide program which aims to provide a full spectrum of both financing and physical disaster risk management tools to PICs. The PCRAFI is 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 are being developed under the PCRAFI to offer the PICs support on disaster risk management and climate change adaptation and urban/infrastructure planning. These applications are developed in partnership with the PICs and will be financed via a series of parallel projects and technical assistance activities.

Project Development Objective

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, Independent State of 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.

2. Project Description

The Pacific catastrophe risk insurance project aims to test the viability of catastrophe risk transfer instruments for the Pacific islands as a source of limited but immediate funding post-disaster. The program would be implemented in November 2012 for two years to offer rapid post-disaster liquidity to participating PICs in the event of major natural disasters. The project would offer country-specific parametric catastrophe risk coverage (against earthquake and tropical cyclones) and would transfer the aggregate risk to the international reinsurance markets. The pilot program prioritizes the PICs that are already active in disaster risk management and willing to further enhance their budget planning against natural disasters. Five countries will

The project will test the viability of sovereign catastrophe risk transfer from the demand side and the supply side. On the supply side, the pilot aims to test the credibility of the catastrophe risk models developed under PCRAFI for market-based financial transactions, and the risk appetite of the international reinsurers to underwrite Pacific catastrophe risks using parametric triggers. On the demand side, the pilot aims to test the ability/willingness of the PICs to purchase catastrophe risk coverage and to demonstrate that such immediate payments can help the affected countries improve their recovery post-disaster.

The Pacific catastrophe risk insurance project is part of a broader program which aims to increase the financial resilience of the PICs against natural disasters. It provides the participating PICs with non-lending technical assistance, in collaboration with SPC/SOPAC, to strengthen their budget planning against natural disasters and their budget execution post-disaster. It provides the Finance Ministries of the PICs with capacity building and advisory services for the design and implementation of an integrated financial strategy against natural disasters, especially against climate-related disasters. It builds on the disaster risk financing strategy promoted by the World Bank: self-retention, such as domestic reserves and/or contingent credit, to cover frequent but non-severe disaster losses, and risk transfer, such as insurance, to cover infrequent catastrophe losses. The non-lending technical assistance focuses primarily on (i) securing immediate liquidity to respond to emergency assistance and early recovery in the aftermath of a disaster and (ii) ensuring an efficient and transparent budget execution process post disaster.

The Pacific catastrophe risk insurance project offers immediate liquidity to five participating PICs in the aftermath of a severe natural disaster that disrupts the provision of government services. It offers earthquake and tropical cyclone (parametric) risk coverage to each participating country on an annual basis from November 2012, to be renewed for the 2013-2014 season. Each country selects per-peril coverage, with an option of coverage attaching at loss levels of a severity of recurrence of 1 in 10, 1 in 15 or 1 in 20 years (or other less frequent attachment as desired); this is the level of the deductible that is retained by the country. The layer of coverage will exhaust at the 1 in 150 year loss level; beyond this level the country receives the maximum coverage as specified in his contract. As the purpose of the pilot program is quick liquidity, and it would not be cost-effective to cover 100 percent of the losses incurred by the government in the aftermath of a disaster, countries will retain a portion of the loss in the risk layer, ceding a predetermined percentage of losses incurred through the policy.

The policies do not pay based on actual losses incurred. Instead, to ensure speed of payout, the policies are triggered by modelled emergency losses calculated using an event footprint. Catastrophe risk models have been developed for the purpose of footprint development and loss simulation. In the aftermath of a disaster, an independent modelling firm will undertake a calculation within 10 business days of receiving a calculation notice.

The portfolio of catastrophe risk transfer policies of the five participating PICs, for the first pilot season 2012-2013, has an aggregate limit (i.e., maximum possible loss) of about US$45 million and an annual expected loss (AEL) of US$1 million. Based on the catastrophe risk models developed by the risk modelling firm AIR Worldwide under this initiative, there is a 54.5 percent chance that a payout is made to at least one participating PIC in any given year. The aggregate
loss on the portfolio is estimated to exceed US$10 million approximately once every 100 years (1 percent annual frequency).

The country-specific catastrophe risk policies will be placed on the international reinsurance market as a single, well diversified portfolio, through the intermediation of the International Development Association (IDA). Financial simulations shows that pooling country-specific catastrophe risks into a single portfolio enables to reduce the catastrophe load, which is an important component of the premium, by almost 70 percent. Experience from the Caribbean Catastrophe Risk Insurance Facility indicates that such a reduction in the catastrophe load could reduce premiums by almost half, compared with the cost of coverage a small island would pay if it had to approach the reinsurance market independently.

**Component.** The project consists of payment of annual premium for the first two years of the pilot operation as detailed in Table 2 below. The project will finance the annual catastrophe risk premiums necessary to participate in the Pacific catastrophe risk insurance pilot program. The coverage provided would help countries face immediate liquidity needs emerging from the occurrence of a major natural disaster.

**Table 2. Annual Catastrophe Risk Premium**

<table>
<thead>
<tr>
<th>Countries</th>
<th>Year 1</th>
<th>Year 2</th>
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</thead>
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<tr>
<td>Republic of Marshall Islands</td>
<td>US$0.40 million</td>
<td>US$0.20 million</td>
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<tr>
<td>Independent State of Samoa</td>
<td>US$0.40 million</td>
<td>US$0.20 million</td>
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<tr>
<td>Solomon Islands</td>
<td>US$0.40 million</td>
<td>US$0.20 million</td>
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<tr>
<td>Kingdom of Tonga</td>
<td>US$0.40 million</td>
<td>US$0.20 million</td>
</tr>
<tr>
<td>Republic of Vanuatu</td>
<td>US$0.40 million</td>
<td>US$0.20 million</td>
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</tbody>
</table>

The financing will be provided in two installments issued to World Bank Treasury as intermediary of the Pacific catastrophe risk insurance pilot, at the request of each country’s Ministry of Finance (MoF). The financing will be withdrawn by the MoF of the participating PICs for direct payment to IDA. The payment of the annual catastrophe risk premium will be made in November 2012 (for the 2012-2013 pilot period) and October 2013 (for the 2013-2014 pilot period).

3. **Financing**
   
   **Source:**
   
<table>
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<th>Grants</th>
<th>($m.)</th>
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<tr>
<td>RECIPIENTS</td>
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<td>Grant</td>
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<td>Total</td>
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4. **Implementation**

The grant proceeds will be transferred on an annual basis from the Pacific Disaster Risk Financing and Insurance MDTF to IDA account at the request of each country’s Ministry of Finance. To obtain funds, the Ministry of Finance will submit a withdrawal application for the
value of the premium. The payment of the catastrophe risk premium will be made in November 2012 and October 2013.

Payments to the beneficiaries in case of disaster triggering a payout will be handled as per the financial derivatives agreement with IDA and managed by WB Treasury. The financial flow of payouts to the affected governments was discussed at the concept note review meeting and it was agreed that those payments would be treated as general budget support rather than for specific investments because (i) the project aims to provide affected governments with immediate liquidity post-disaster and (ii) in the longer term, the Pacific catastrophe risk insurance program would involve direct payouts from the reinsurance companies to the PICs with no World Bank intermediation. In addition, non-lending technical assistance is provided under a parallel project (P130347) to help the participating PICs improve their financial response capacity post-disaster (including post-disaster budget execution).

The proposed project aims to reduce the countries' financial vulnerability to natural disasters through insurance coverage against earthquakes and tropical cyclones. The project will meet its development objectives if the participating countries benefit from catastrophe insurance coverage (against tropical cyclones and earthquakes) for the period of the project. Monitoring and evaluation of the project will be conducted on an annual basis. The Bank team will liaise with the participating Ministries of Finance to ensure that premium payments have been made on time and that each country is covered by the pilot program.

5. Safeguard Policies (including public consultation)

The Project is rated as environment category C.

<table>
<thead>
<tr>
<th>Safeguard Policies Triggered by the Project</th>
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<td>Environmental Assessment (OP/BP 4.01)</td>
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<td>Natural Habitats (OP/BP 4.04)</td>
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<td>Pest Management (OP 4.09)</td>
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<tr>
<td>Projects in Disputed Areas (OP/BP 7.60)</td>
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6. Contact point at World Bank and Borrower

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1 See Minutes of the Concept Note Review Meeting (P130441 and P130347) of March 30, 2011.

* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas.
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Contact: Mr. Shadrach Fanega  
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Borrower: Kingdom of Tonga  
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