

Goal of Approach: PCRAFI

The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) aims to provide the Pacific Island Countries (PICs) with disaster risk modeling and assessment tools. It also aims to engage in a dialogue with the PICs on integrated financial solutions for the reduction of their financial vulnerability to natural disasters and to climate change. The initiative is part of the broader agenda on disaster risk management and climate change adaptation in the Pacific region.

The **Pacific Disaster Risk Assessment** project provides 15 countries with disaster risk assessment tools to help them better understand, model, and assess their exposure to natural disasters. It builds on close collaborations between the Secretariat of the Pacific Community through its Applied Geoscience & Technology Division (SPC-SOPAC), WB and ADB, with technical inputs from GNS Science, Geoscience Australia, and AIR Worldwide.

The **Pacific Disaster Risk Financing and Insurance** (PDRFI) Program is one of the activities under Phase 3 of PCRAFI. This program provides the PICs with tailor-made advisory services to improve their macro-economic planning against natural disasters and develop a national disaster risk financing strategy as part of their broader disaster risk management and climate change adaptation agenda. In particular, this pilot aims to test the viability of catastrophe risk insurance in the Pacific by allowing the PICs to transfer catastrophe risk to the international reinsurance markets.

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Main elements of the implementation strategy

The Tools:

- Regional historical hazard and loss database for major disasters which contains a historical earthquake catalogue covering approximately 115,000 events of magnitude 5 or greater that occurred in the region between 1768 and 2009 and a historical tropical cyclone catalogue includes 2,422 events from 1948 to 2008;
- The hazard models, which include earthquakes (both ground shaking and tsunamigenic) and tropical cyclones (wind, storm surge, and excess rainfall), have been peer-reviewed by Geoscience Australia who described them as "high standard, thorough and representative of best practice."
- The regional GIS exposure database contains components for buildings and infrastructure, agriculture, and population. For the building and infrastructure data set, more than 400,000 building footprints for structural classification were digitized from high-resolution satellite images.
- Country-specific catastrophe risk models have been developed for each country integrating data collected and produced through the risk modelling process and include maps showing the geographic distribution of hazards, assets at risk, and potential losses that can be used to prioritize DRM interventions.
- Pacific Risk Information System includes the data and information captured in the databases and makes them available in an on-line portal. It offers better risk information for smarter investments.

The Applications

Phase 3 of the Pacific Catastrophe Risk Assessment and Financing Initiative aims to provide further technical assistance to the PICs for the refinement of the Pacific disaster risk assessment tools and the applications of these tools.

Application 1. Pacific Disaster Risk Financing and Insurance. The programme provides the Ministries of Finance and Planning with tailor-made advisory services to help improve their macro-economic planning against natural disasters and develop a national disaster risk financing strategy as part of their broader disaster risk management and climate change adaptation agenda.

It also helps the PICs develop an integrated disaster risk financing strategy, relying on an optimal combination of reserves, contingent credit, insurance, and donor grants.

UNFCCC expert meeting on a range of approaches to address loss and damage associated with the adverse effects of climate change, including impacts related to extreme weather events and slow onset events, 9-11 October 2012, Bridgetown, Barbados

Application 2. Mainstreaming risk information into urban and infrastructure planning. PacRIS ensures that disaster risk and climate change information and considerations form an integral part of the urban and infrastructure planning process.

Application 3. Rapid pre and post-disaster damage estimation. PacRIS provides disaster managers and first responders with tools and information to quickly gain an overview following a disaster on areas and population affected and the likely severity of the event in terms of potential fatalities, injuries and building, infrastructure and crop damage.

Targeted beneficiaries

Pacific island countries will benefit from disaster risk assessment tools and applications to help them better understand, model, and assess their exposure to natural disasters. The results from application 3 in particular can help, when combined with other domestic assessments to improve strategic identification of post disaster needs. Similarly application 1 will improve post disaster liquidity enabling the Governments to begin work on the identified needs and/or assessments required to declare a national state of emergency enabling donors to commence their assistance.

Any significant lessons learned

- The models were designed to develop national risk profiles, consequently this limits applications at the sub national level.
- The reliance of the proprietary risk models and its associated software is a challenge when taking the financial implications in to account.

Resource requirements

This type of initiative requires significant resources, both human and financial to acquire, collate and process the data.

Potential for replication or scaling-up

There are current opportunities to undertake an assessment of potential future tropical cyclone risk to critical assets in Pacific island countries with climate change by DCCEE's Pacific Climate Change Science Programme (PCCSP) this would combine both climate and disaster related risks.

In order to upscale such an initiative would require significant resources. If donors can coordinate their efforts to effectively identify and assess the risks posed to countries this will help inform future development across all of Government. Once the risks and subsequent vulnerabilities have been identified countries can then establish effective risk financing strategies to help mitigate the effects of climate change and disasters.

Any additional information

For further information please visit: www.pacris.sopac.org