

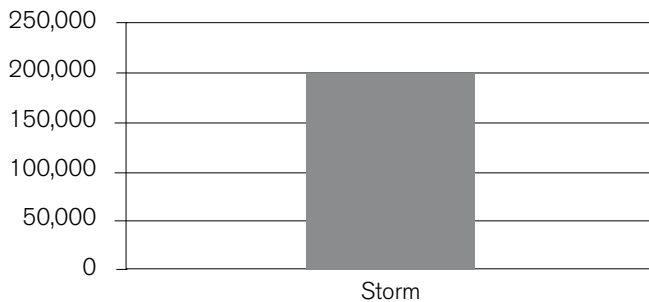
# SOLOMON ISLANDS

To prepare the Country DRM Note, consultations were undertaken with members of the World Bank’s Pacific team and the Director of the NDMO, and meetings were held with Ministry of Home Affairs, Ministry of Environment, Conservation and Meteorology, Ministry of Mines and Energy, Ministry of Planning and Aide Coordination, Ministry of Finance, Ministry of Works and Infrastructure, European Commission, ADB, AusAID, NZAID, UNDP, SOPAC, Red Cross.

The matrix of priority areas and actions for DRM and estimated budget allocations were discussed and cleared with the NDMO Director in May 2009 after consultation within Government and with key donors and partners. There is strong support and ownership and endorsement by NDMO for the matrix of priority areas and actions.

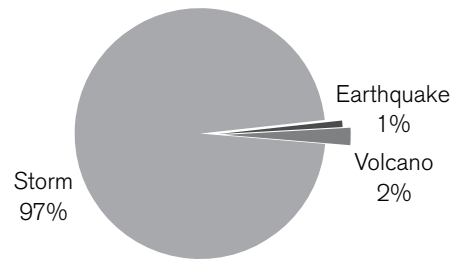


**Economic Damages by Disaster Type (1000s US\$)**



Source: EM-DAT: The OFDA/CRED International Disaster Database.

**% Population Affected by Disaster Type**



Source: EM-DAT: The OFDA/CRED International Disaster Database.

## 1. DISASTER RISK PROFILE

**The Solomon Islands rank among 20 countries with the highest economic risk exposure to two or more hazards.** With over 992 islands stretching over 1,500 kilometers, this group of mountainous islands with some low lying coral atolls has just over half a million people.

**The Solomon Islands lie East of Papua New Guinea and north of Vanuatu.** At its furthest reach, the Santa Cruz Islands are north of Vanuatu and some 200 kilometers from the next closest island in the Solomon Islands chain.

**The Islands are exposed to a wide range of geological, hydrological and climatic hazards, including tropical cyclones, volcanic eruptions, earthquakes, tsunamis, landslides, floods and droughts.** Over the past 30 years there have been six major natural disasters: two earthquakes – one with an associated tsunami – and four tropical cyclones, directly impacting over 100,000 people with over 100 deaths.

**The last disaster was the earthquake and tsunami that occurred on 2 April 2007 centered on the Western Province and Choiseul Provinces.** It killed 52 people and damaged or destroyed some 6,000 homes and other

buildings including schools and hospitals. The cost of reconstruction was estimated at around US \$100 million or 80 percent of the 2006 national recurrent budget.

**Heavy rain from 29 January to 2 February 2009 caused extensive flooding in the western and eastern parts of Guadalcanal,** impacting a total population of 52,000, displacing an estimated 2,000 people and costing around US \$3m.

Capital	Honiara
Provinces	Nine provinces: Guadalcanal, Central, Western, Ysabel, Malaita, Makira, Temotu, Choiseul, and Rennell and Bellona.
Official Language	English
Independence	July 7 1978 (from UK)
Area	<i>total:</i> 28,450 km <sup>2</sup> <i>land:</i> 27,540 km <sup>2</sup> <i>water:</i> 910 km <sup>2</sup> <i>coastline:</i> 5313 km
Land Use	<i>arable land:</i> 0.62% <i>permanent crops:</i> 2.04% <i>other:</i> 97.34% (2005)
Government	Parliamentary Democracy
Population	595,613
GDP	GDP (December 2007): US \$270 million
HDI	129 out of 177
Terrain	mostly rugged mountains with some low coral atolls
Climate	tropical monsoons; few extremes of temperature and weather
Natural resources	fish, forests, gold, bauxite, phosphates, lead, zinc and nickel
Major products	copra, marine products, and timber. Subsistence activities dominate the lives of 80 percent of Solomon Islanders.
Main development donors	Australia, New Zealand, the EU, Japan, and the Republic of China (Taiwan)

World Fact Book, World Bank Country Reports.

## 2. ACTIVITIES UNDER THE HYOGO FRAMEWORK OF ACTION

### **HFA Priority # 1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation**

#### THE NATIONAL DRM AGENCY

**The National Disaster Council has the primary responsibility for disaster risk management in the Solomon Islands.** Established by the National Disaster Council Act (1989) and the National Disaster Plan (1987), it is supported by the National Disaster Management Office (NDMO) under the Ministry of Home Affairs. The NDC is currently reviewing the institutional framework for DRM as they plan to develop a National Action Plan for DRM and Disaster Risk Reduction.

**A cross-section of ministries participates in the National Disaster Council:** the Police Commissioner, the Permanent Secretary of the Ministry of Home Affairs, the Ministry of Foreign Affairs, the Ministry of Infrastructure and Development, the Ministry of Finance and Treasury, the Ministry of Communications and Civil Aviation, the Ministry of Health and Medical Services, and the Ministry of Provincial Government. Other ministries and agencies can be co-opted based on the nature of the emergency.

**Disaster Risk Reduction needs to be owned by all government agencies rather than a single ministry.** The NDMO has limited ability to coordinate across ministries due to its location in the Ministry of Home Affairs. The Chairman of the NDC does not report to the Prime Minister but to the Minister of Home Affairs. The proposal for the new National Disaster Risk Management Plan and Act foresees that the NDC falls directly under the Prime Minister's office, with the Chairman reporting to the Prime Minister.

**The country's disaster risk management framework is currently under review and a new proposal should be presented to Parliament by November 2009.** This new plan and legislation addresses both CCA and DRM and provides for a broader NDC membership including the Prime Minister's Office, the Ministry of Development Planning and Aid Coordination; the Ministry of the Environment, Conservation and Meteorology; The Ministry of Mines and Energy; the Ministry of Agriculture and Livestock and the Ministry of Women Youth and Children.

**The new proposal will establish four NDC Committees:** Committees on (1) Disaster Management (lead by the NDMO), (2) Hazards (lead by the Ministry of Environment, Conservation and Meteorology), (3) Recovery & Rehabilitation (lead by the Ministry of Development Planning and Aid Coordination), and (4) Risk Reduction (led by the Ministry of Lands, Housing and Survey).

#### LEGISLATIVE FRAMEWORK

**The current legislation does not address risk reduction.** The National Disaster Council Act provides the current institutional framework for Disaster Management (DM). The Act legally supports the creation of a National Disaster Plan. It also spells out the use of special powers in times of disasters should the need arise. Upon Parliament's approval of the National Disaster Risk Management Plan, a National DRM Act will be drafted. The Solomon Islands does not have sub-national DRM strategies or plans.

**A review of the current Act and other potentially relevant legislation took place in 2006.** Based on the findings, the proposed National DRM Plan (and Act) will address current shortcomings such as moving the NDC to the Prime Minister's Office, strengthening the institutional structures and ensuring a more coordinated joint government effort.

**The NDC meets quarterly and in response to disasters.** In the future, the four proposed Committees should meet regularly to address their area of responsibility and report to the quarterly NDC meetings.

#### DRM AT THE SUB-NATIONAL LEVEL

**The provincial disaster committees are tasked with disaster awareness, preparedness, management and response activities.** In the event of a natural disaster, they are responsible for ex-post response. However, there are no provincial disaster plans currently in place and arrangements are minimal and lacking accountability.

#### INTERMINISTERIAL INVOLVEMENT IN DRM

**Several key ministries participate in disaster risk management.** As mentioned above, the Ministry of Home Affairs has the primary role for disaster management in the area of preparedness and response; the Meteorological Division (Ministry of Environment, Conservation and Meteorology) provides climate data; the Geohazards Unit of the Ministry of Mines and Energy is responsible for data and information on geological hazards; the Water Resources Division of the Ministry of Mines and Energy provides stream flow data; the Ministry of Agriculture and Livestock is responsible for pest control and the Ministry of Health and Medical Service has the responsibility for pandemics and is involved in disaster response.

**However, effective mechanisms for cross-sector collaboration and cooperation are absent and linkage between national, provincial and community governance systems are weak.** Sector ministries are uncertain of

their roles both before and after disasters and avoid accountability. Structures beyond provincial government are non-existent except for arrangements for distributing relief. The revised disaster risk management framework will address all of these shortcomings with increased focus and accountability through the creation of the four Committees and improved coordination and clarity of roles through explicit structures at the national, provincial and local levels. To be effective, these institutional structures will need sustained support for implementation over three years and beyond.

#### CLIMATE CHANGE AND DRM

**The Ministry of Environment, Conservation and Meteorology's Climate Change Division is responsible for climate change adaptation (CCA).** Cross sector coordination is through the National Advisory Committee on Climate Change – currently known as the TeCOM (Technical Committee on Climate Change). A policy framework for CCA is yet to be developed and linkages across government are weak. It is intended that CCA will come within the widened overview and scope of the new NDC. Currently MECM is only a co-opt member of the NDC. A larger role is foreseen under the new framework and the MECM will take the lead of the Hazards Committee.

**The National Adaptation Programmes of Action (NAPA) was developed in November 2008 and lays out the following priority adaptation activities:** (1) managing the impacts of, and enhancing resilience to, climate change and sea-level rise in agriculture and food security, water supply and sanitation, human settlements, human health and education, awareness and information; (2) climate change adaptation on low-lying and artificially built-up islands in Malaita and Temotu provinces; (3) waste management; (4) coastal protection; (5) fisheries and marine resources; (6) infrastructure development; and (7) tourism.

#### **HFA Priority # 2: Identify, assess, and monitor disaster risks—and enhance early warning**

##### NATIONAL, REGIONAL, LOCAL AND SECTOR RISK ASSESSMENTS

**Hazard maps are unavailable at a sufficient resolution for purposes of disaster risk reduction and climate change and adaptation activities.** Flood hazard maps exist for northern Guadalcanal, albeit at a somewhat coarse scale. National volcanic and landslide hazard maps are not available. While some data exists, a detailed seismic mapping would require analyses and additional data. However, there is a lack of capacity and tools to carry out data analyses, hazard mapping and vulnerability and risk assessments.

The existing risk maps do not factor future climate projections and there are no comprehensive community-level risk assessments or mapping.

The existing observation networks for hazard monitoring are degrading and are inadequate to support ongoing understanding of the local hazard or changes due to climate change or to support local early warning arrangements.

##### EARLY WARNING

**There are various technical agencies charged with collecting hazard information.** Data and information on geological hazards is produced by the Geohazards Unit (MME), climate data by the Meteorological Division (Ministry of Environment, Conservation and Meteorology - MECM), and stream flow data by the Water Resources Division (Ministry of Mines and Energy (MME) – all on a national level). The Ministry of Agriculture and Livestock (MSL) monitors pests, and the Ministry of Health and Medical Services (MHMS) pandemics. MHMS is a member of the NDC, the others are co-opted members. The proposed new framework foresees full membership for all the above ministries, and NDC committee leadership for MECM on hazards.

**Forecasting is linked to the Australian Bureau of Meteorology and Pacific Regional Meteorological Center**

**in Fiji, which provide the primary source of data.** For example, in case of a cyclone, the Meteorological Division receives information from overseas weather sources in Nadi (Fiji), Brisbane (Australia) and Honolulu (Hawaii/USA) (for Tsunami information, which is however of limited use for locally generated tsunamis). The Meteorology division informs the Chairman of the NDC, the Commissioner of Police, the Chief of Marine, the Controller of Aviation and the Chairman of the relevant Provincial Disaster Committees and Solomon Island Broadcasting Corporation.

**NDMO is responsible for the activation of emergency management arrangements, coordinating the National Disaster Operations and issuing of public safety messages/evacuation orders through radio and television.**

Issuing of cyclone warnings to the public takes place only after the approval of the NDC. The National Emergency Operation Center contacts the Provincial Disaster Committee, while NDMO directly contacts affected communities.

**A wide range of communications systems are available for disaster information dissemination from the more sophisticated to community-based methods** High frequency (HF) radio transceiver units; VHF transceiver units; Telephone (urban); facsimile (urban); Internet and email service; Satellite telephone; EMWIN (for warnings to the Met Service and NDMO), Broadcasting (SIBC; Television broadcasting service) and PFNET rural e-mail services. Apart from ENWIN these services do not have 24 hour operation. All have limited outreach to rural and remote communities. There are severe limitations in the ability to get early warnings and information to large parts of the rural community which makes up 85 percent of the population. This is also true for livelihood and development information. The lack of an effective communication network through the approximately 10,000 small rural villages is a major constraint to effective DRM and risk reduction – as it is also to effective rural development activities across the livelihood and welfare sectors.

### **HFA Priority # 3: Use of knowledge, innovation, and education to build a culture of safety and resilience at all levels**

#### EDUCATION AND TRAINING

**The National Disaster Council runs an annual Disaster and Risk Awareness Campaign through the NDMO** with input from the Meteorological Service, the geohazards and hydrology units of the Ministry of Mines and Energy, the Ministries of Health and Education, the Police, Search and Rescue and a number of involved NGOs. The program targets schools, villages and the business sector and addresses hazard information, preparedness and warning arrangements. However, there is a lack of funding to support this activity.

**To be effective, programs need to occur in the villages with an annual follow-up.** The resources and local arrangements required are significant to address the around 10,000 villages of the Solomon Islands. In addition, materials and content need to be developed. Core frameworks need to be developed within which to coordinate NGO and civil society programs.

**DRM is not currently integrated into school curricula.** The only education programs with a DRM component is in School of Nursing, which includes a three-day introduction into DRM for its third year students.

### **HFA Priority # 4: Reduction of the underlying risk factors**

#### MAINSTREAMING DRR INTEGRATION INTO LAND USE, ZONING, BUILDING CODES, LOCATION AND CONSTRUCTION OF PUBLIC INFRASTRUCTURE

**Disaster risk management is not yet integrated into the Solomon Islands' planning and budgeting processes.** There is no mechanism for the mainstreaming of DRM into national and sector policies, plans, legislation and regulations. If DRM is incorporated in the land law, it is not enforced and land use. Zoning, building codes, location and construction of public infrastructure do not take hazards into account.

**While recognizing public assets are extremely vulnerable to adverse natural events,** key ministries (i.e. transport, planning, water resources, etc) have not mainstreamed disaster risk reduction measures into their plans and new investments. DRM is not mainstreamed into major sector investments (e.g., education, water, environment, infrastructure, health sectors). The World Bank does not have school, hospital or roads building projects in the Solomon Islands but disaster risk considerations are incorporated into other new projects such as rural development.

The revised scope and committee structure for the proposed NDC reporting to the Cabinet will provide the mechanism to address these issues but ongoing support for planning, capacity development and implementation at the sector level will be necessary to achieve sustainable progress on the ground.

#### PRIVATE SECTOR INVOLVEMENT IN DRM

**The private sector is involved in response by providing and delivering relief in disaster affected areas.** However, problems with regards to payment mechanisms are a major constraint. There are no public-private partnerships, nor is there a forum for regular consultation with the private sector on DRM. Irregular private sector engagement takes place, for example, at the 2007 Post-Tsunami workshop. The private sector was also consulted on the proposal for the new framework for DRM and provisions for financial management and engagement mechanisms with the private sector (as well as for other partners) will be included.

#### RISK FINANCING FRAMEWORK

**The NDMO has a limited annual budget allocation for both ex-ante and ex-post activities.** Financing for disaster risk management allocation in 2009 was (1) SBD 800,000 (US \$99,400) for awareness, education and risk reduction and (2) SBD 2 million (US \$248,600) for response activities.

**If unused, response activity funds cannot be carried over.** In case of emergency, the SBD 2 million are paid into the National Disaster Council Fund, which also includes donations, contributions or income from sales of property. Funds in the NDC Fund that are not required for immediate use do not lapse but are to be invested in securities – with the exception of the annual appropriation of SBD 2 million. There is also a contingency warrant to request funds in cases of emergency.

**There is no government insurance scheme in place for public assets and, common amongst many countries, the government has no obligation to cover losses to private property.** A World Bank Pacific Islands Catastrophe risk financing initiative that would cover losses to public and private assets in the Pacific Islands countries is under consideration but should await the implementation of the new DRM framework and possibly the completion of some rigorous assessment of national and strategic assets.

#### **HFA Priority # 5: Strengthen disaster preparedness for effective response at all levels.**

#### EMERGENCY MANAGEMENT

**The National Emergency Operations Center (NEOC), which falls within the functions of the National Disaster Council, is in charge of the country's emergency response.** Immediate response is coordinated with the Police Department but the current National Disaster Plan makes coordination across other agencies difficult. Systems for assessment, planning and financial management are limited.

**The Police and Fire Department includes search and rescue teams but equipment is limited.** The presence of the Regional Assistance Mission to the Solomon Islands (RAMSI) provides another response capability.

**Response capacity is often dependent on international support but poor systems make coordination of this support difficult and lead to loss of confidence in Government arrangements.** The new DRM arrangements are intended to improve this with explicit structures and accountabilities across government agencies.

#### SIMULATION EXERCISES

**Disaster simulation exercises are done as part of annual training sessions with Provincial Disaster Committees.** The Solomon Islands participates in the Pacific-wide Tsunami Exercise. A nation-wide disaster simulation exercise is planned for October/November 2009 to test the new framework as part of the proposal for a new DRM plan.

#### REGIONAL LINKAGES

**In part due to its own limited capacity and resources, the Solomon Islands are linked in with a number of regional facilities.** The Meteorological Division receives information from overseas weather sources in Fiji, Australia and Hawaii. Tide gauges throughout the region give tide measures, pressure, wind speed and direction and sea surface and are all linked to the Australian National Tidal Facility in Adelaide, which was established as part of the South Pacific Sea Level and Climate Monitoring Project.

#### DAMAGE AND LOSS ASSESSMENT

**In the past damage and loss assessments have been slow and if not inaccurate then often conflicting, hampering relief and particularly recovery activities.** With nine new Provincial Disaster, Officers assessments teams will be formed and trained as part of the new arrangements. This is a significant commitment by the Government and on-going support will be needed.

### 3. KEY DONOR ENGAGEMENTS

Existing Projects with Donors and International Financial Institutions	Funding Agency/ International Partners	Allocated Budget and Period (US\$)	HFA Activity Area(s)
<i>Pacific Catastrophe Risk Pool Feasibility Study</i> (The Cook Islands, Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu )	World Bank	2008–present US \$400,000	1,2,5
<i>Sustainable management through reduced risk from disasters and climate</i> (Fiji, Kiribati, Marshall Islands, Papua New Guinea, Solomon Islands, Timor-Leste and Vanuatu )	World Bank	2008–present US \$1,900,000	2,3,4,5
Strengthening the National Disaster Management Office	AUSAID through the NDMO	2005–2010 AUS \$2,500,000	1, 2, 3, 4,
Strengthening disaster management facilities in the provinces	The European Union/provincial level partners	Not available	1,2,3,4
Community level disaster risk reduction and disaster preparedness workshop	JICA/provincial level partners	Not available	2,3,4
Disaster Risk Management Advisory Support and Rehabilitation of Damaged infrastructure	ADB	Not available	
<i>Pacific Islands Climate Change Assistance Program (PICCAP)</i> (The Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Samoa, Solomon Islands, Tuvalu and Vanuatu)	SPREP	1997–present	4
<i>Pacific Islands Disaster Assistance Program (PDAP):</i> (The Cook Islands, Fiji, Kiribati, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu, Federated States of Micronesia and the Republic of the Marshall Islands)	USAID/OFDA	1995–present US \$4,001,756	5

(Cont.)

Existing Projects with Donors and International Financial Institutions	Funding Agency/ International Partners	Allocated Budget and Period (US\$)	HFA Activity Area(s)
<i>Pacific Islands Climate Prediction Project</i> (Cook Islands, Fiji, Kiribati, Niue, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu and Papua New Guinea)	AUSAID and the Australian Bureau of Meteorology	2004– present AUS \$5.5 million	2
<i>South Pacific Sea Level and Climate Monitoring Project</i> (The Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Marshall Islands, Nauru, Papua New Guinea (PNG), Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu)	AUSAID	1991– 2010	2,5
Environmental sustainability mainstreamed into regional and national policies and planning frameworks (Federated States of Micronesia, Fiji, Kiribati, Nauru, Palau, Marshall Islands, Solomon Islands, Tonga, Tuvalu and Vanuatu)	UNDP	2008–2012 US \$16,831,000	
<i>South Pacific Sea Level and Climate Monitoring Project</i> (The Cook Islands, Federated States of Micronesia Fiji, Kiribati, Marshall Islands, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu)	AUSAID	1991–2010	2,5

#### 4. GLOBAL FACILITY FOR DISASTER REDUCTION AND RECOVERY (GFDRR): ACTION PLAN

As the islands currently lack a disaster risk management strategy and implementation plan, a key activity would be providing technical assistance to the development of a framework for disaster risk management and developing facilities whereby this framework can be funded. Both country specific and PIC initiatives must be considered to (i) strengthen institutional capacity for strategic planning and coordination (ii) integrate disaster risk reduction into all development planning and (iii) lead towards the next phase of a comprehensive risk finance strategy.

Indicative Program for GFDRR Funding (Projects and engagement areas being considered for GFDRR funding)	Implementing Agency/ International Partners	Indicative Budget and Period (US\$)	HFA Activity Area(s)
<p><b>A. Support the integration of DRM, including DRR and CCA, in Solomon Is Government institutions, policies and plans</b></p> <p><i>Priority Activities:</i></p> <p>1. Support the implementation of the DRM/CCA Institutional Framework through the National Disaster Council (NDC). This could include: support to NDC Committees and Operational Clusters at the national, provincial and local levels; development of policies and arrangements for integrating DRM/CCA into national, sector and provincial planning and budget processes</p> <p>2. Strengthen DRR/CCA planning and budgeting capacity of sector specific institutions and develop DRR/CCA plans within key ministries (Ministries of Agriculture, Infrastructure, Lands, Women Youth and Children, Health, Education, Environment, Rural Development)</p>	<p>Prime Minister's Office National Disaster Council (NDC) Ministry of Development Planning and Aid Coordination Ministry of Finance and Treasury NDC Ministries NDMO Sector Ministries</p> <p>International Partners: AUSAID 2009 AUS \$600,000 Potential for cooperation and coordination with donor and NGO community programs in DRR and CCA</p>	<p>2009–2011</p> <p>2009 US \$100,000</p> <p>2010 US \$200,000</p> <p>2011 US \$200,000</p>	1,2,3,4,5

(Cont.)

Indicative Program for GFDRR Funding (Projects and engagement areas being considered for GFDRR funding)	Implementing Agency/ International Partners	Indicative Budget and Period (US\$)	HFA Activity Area(s)
<p><b>B. Implement DRR activities and pilot investments in priority sectors and at community level</b></p> <p><i>Priority activities:</i></p> <p>1. Implementation of priority DRR activities in selected key sectors. Possible activities could include: improving end-to-end early warning arrangements; developing and disseminating risk maps, undertaking provincial and community level DRM programs in conjunction with NGO and local community groups, encouraging the private sector in DRR activities and promoting the sustainable use and management of ecosystems – including through better regulation of land-use and development activities to reduce risk and vulnerabilities.</p> <p>This activity and the selection of pilot interventions will depend on the progress under Activity A and will be coordinated with other donors and partner institutions.</p> <p>2. Support the development and implementation of a wireless broadband communication network across the nine provinces to support disaster risk management arrangements and early warning systems.</p> <p>Such a network could also support hazard observation monitoring networks and rural development, livelihood and welfare sector programs. The network could comprise up to seven satellite receiving stations, microwave spine systems with local village networks on a village ownership business model and be installed in association with technical co-sponsors.</p> <p>Activities would include: addressing the feasibility of the technical and business model solutions; implementing a satellite receiving network with microwave spine system in three stages; and progressively establishing local networks through villages on a local ownership business model.</p>	<p>National Disaster Council (NDC) Ministry of Development Planning and Aid Coordination Ministry of Finance and Treasury Ministry of Communication and Aviation Ministry of Environment, Conservation and Meteorology Ministry of Rural Development NDMO Utility agencies NGO's Private sector</p> <p>International Partners: New Zealand based technical co-sponsor UNDP EU</p>	<p>2009–2011</p> <p>2010 US \$300,000</p> <p>2011 US \$600,000</p> <p>2009 US \$100,000</p> <p>2010 US \$500,000</p> <p>2011 US \$100,000</p>	<p>1, 2,3,4,5</p>

(Cont.)

Indicative Program for GFDRR Funding (Projects and engagement areas being considered for GFDRR funding)	Implementing Agency/ International Partners	Indicative Budget and Period (US\$)	HFA Activity Area(s)
<p><b>C. Strengthen institutional arrangements for integrated hazard management, including developing an integrated hazard information system and progressively upgrading the hazard observation networks.</b></p> <p><i>Priority activities:</i></p> <ol style="list-style-type: none"> <li>1. Develop a hazards strategic plan and undertake capacity development within the hazards group including but not limited to: mapping of key hazards, development of an integrated all-hazards information system with risk and vulnerability tools, undertaking risk and vulnerability assessments for priority and identified sector clients</li> <li>2. Establish minimum requirements for the Solomon Islands observation networks (particularly for the meteorological and hydrological monitoring) and progressively upgrade in conjunction with other regional programs</li> </ol>	<p>NDC Committees for Hazards and Risk Reduction Ministry of Environment, Conservation and Meteorology Ministry of Mines and Energy Ministry of Lands, Housing and Survey NDMO</p> <p>International Partners: UNDP EU Regional HYCOS and Meteorological review programs Melanesian Volcanic Network initiative.</p>	<p>2009–2011</p> <p>2009 US \$100,000</p> <p>2010 US \$200,000</p> <p>2011 US \$200,000</p>	<p>1,2,3,4</p>
<p><b>D. Develop the Guadalcanal Flood Plain Management regime and warning system and associated DM Arrangements</b></p> <p><i>Priority activities</i></p> <ol style="list-style-type: none"> <li>1. Define a hazard monitoring regime and floodplain management plan</li> <li>2. Install a hydrological network and warning system</li> <li>3. Develop local disaster management arrangements</li> </ol>	<p>NDC – Risk Reduction Committee Ministry of Mines and Energy – Hydrological Unit Ministry of Environment, Conservation and Meteorology Ministry of Lands, Housing and Survey NDMO</p> <p>International Partners: ADB EU</p>	<p>2009–2011</p> <p>2009 US \$100,000</p> <p>2010 US \$500,000</p> <p>2011 US \$100,000</p>	<p>2,3,4</p>
<p><b>Total Budget Requested</b></p>		<p><b>US \$3.3 million</b></p>	

#### 4. BIBLIOGRAPHY

- ADB, 2009. Aide Memoire of Joint Reconnaissance Mission of Flood Damage, 9-13 March 2009.
- ADB Solomon Islands 2008 Fact Sheet.
- The CIA World Factbook 2009.
- Hyogo Framework for Action 2005-2015: I S D R International Strategy for Disaster Reduction.
- Bettencourt, Sofia, Richard Croad, Paul Freeman, John Hay, Roger Jones, Peter King, Padma Lal, Alan Mearns, Geoff Miller, Idah Pswarayi-Riddihough, Alf Simpson, Nakibae Teuatabo, Ulric Tritz, Maarten Van Aalst 2005 'Not If, But When: Adapting to Natural Hazards in the Pacific island Region' The World Bank.
- Manilofia, Rex, 2006. Disaster Communications in the Solomon Islands. ITU/ESCAP Disaster Communications Workshop, 12–15 December 2006, Bangkok, Thailand.
- UNDP 'Human Development Index' 2007.
- The World Bank 2008 Pacific Catastrophe Risk Financing Initiative.
- The World Bank, 2008. GFDRR Solomon Islands Country Assessment.
- The World Bank 2007 Country Summary.
- Max Dille, Robert S. Chen, Uwe Deichmann, Arthur L. Lerner-Lam,4 and Margaret Arnold 'Natural Disaster Hotspots; A Global Risk Analysis' World Bank 2005.