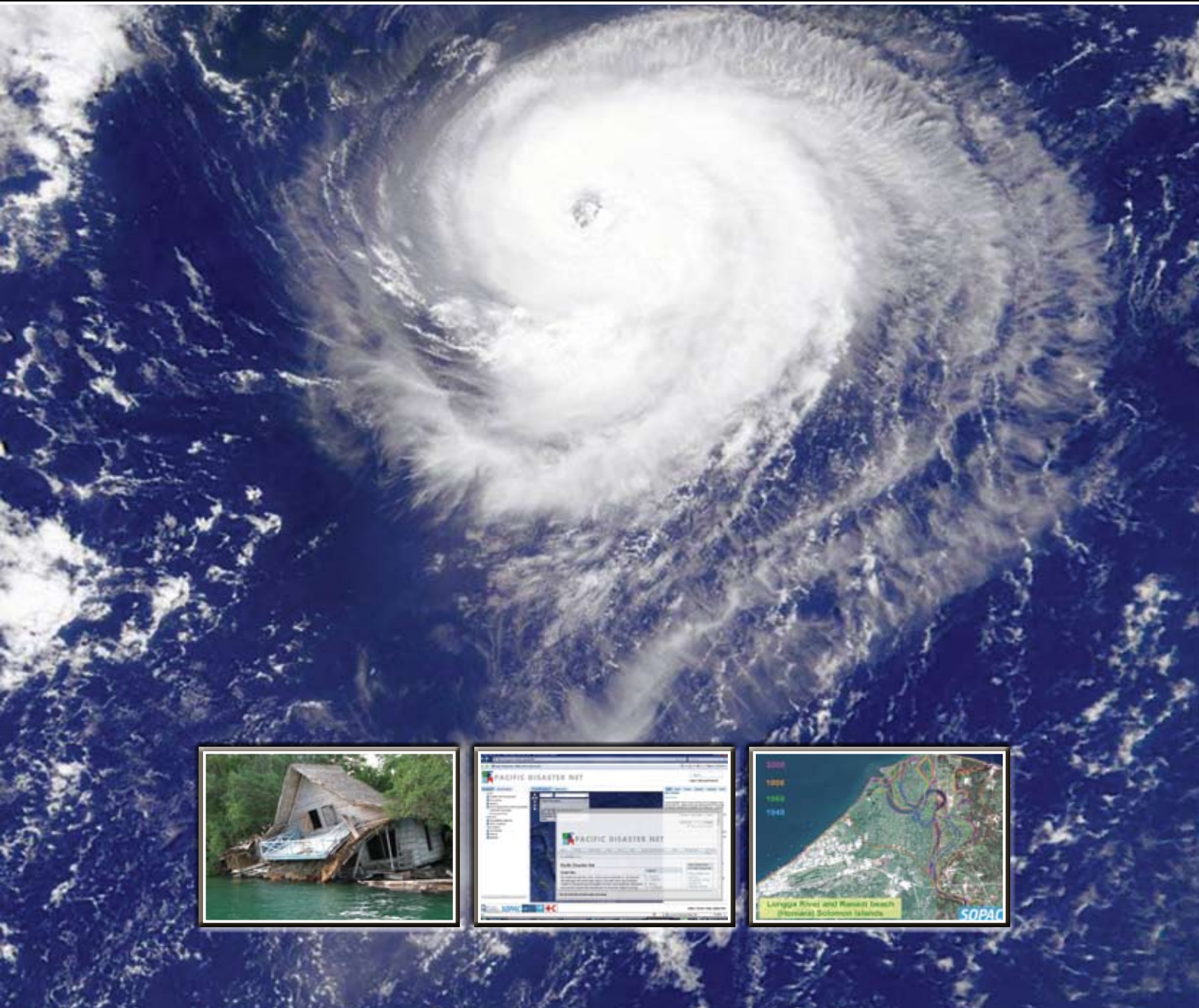


Implementation of the Hyogo Framework for Action and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 – 2015

June 2009

Report for the period 2007 - 2009



COMPILED BY

Community Risk Programme
SOPAC Secretariat
June 2009

IMPORTANT NOTICE

This report was prepared in partnership with the Secretariat of the UN International Strategy for Disaster Reduction (UNISDR) in Asia and the Pacific and funding support of the World Bank Global Facility for Disaster Reduction and Recovery (GFDRR).

SOPAC Miscellaneous Report 674

Copies of this report can be obtained from SOPAC at the address below

PACIFIC ISLANDS APPLIED GEOSCIENCE COMMISSION
SOPAC Secretariat
Private Mail Bag
GPO, Suva
FIJI ISLANDS
www.sopac.org
Phone: +679 338 1377
Fax: +679 337 0040
director@sopac.org

The logo for SOPAC, consisting of the letters 'SOPAC' in a bold, blue, sans-serif font.

or can be downloaded at
www.pacificdisaster.net



**Implementation of the Hyogo Framework for Action
and the
Pacific Disaster Risk Reduction and Disaster Management
Framework for Action 2005 – 2015**

Report for the period 2007 - 2009

June 2009

Regional Synthesis Progress Report

THE REPORTING ORGANISATION

Reporting organization

Pacific Islands Applied Geoscience Commission (SOPAC)

Scope of organisation's mandate (e.g. national authority for disaster, NGO network)

SOPAC is an inter-governmental, regional organisation that focuses on supporting national and regional initiatives and actions towards sustainable development through the provision of continued assistance to its member countries in the three key programme areas:

Ocean and Islands which seeks to improve technical knowledge of ocean and island ecosystems for the sustainable management of natural resources, through: resources use solutions; monitoring physical and chemical change in ecosystems; and natural resources governance.

Community Lifelines is a diversified programme that strengthens and improves community access to energy, water and sanitation, and information and communication technologies through: resources assessment, development and management; asset management; and community lifelines governance and advocacy.

Community Risk which seeks to build safer communities through improved disaster risk management practices by: strengthening resilience to disasters, mitigating the effects of hazards; and mainstreaming disaster risk management.

These three key programmes are supported by **Corporate Services** which maintains an information technology unit, provides publication and library services and offers technical and field services for work programme delivery.

Country, region, or other area being reported on

The Pacific Islands Region consisting of SOPAC member countries: Cook Islands, Federated States of Micronesia, Fiji, Guam, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. American Samoa, French Polynesia, New Caledonia and Tokelau are associate members.

Reporting on own organization or on behalf of others – please state

Reporting for SOPAC, on behalf of SOPAC member countries and reporting as the coordinating agency of the Pacific Disaster Risk Management Partnership Network (PDRMPN) whose various programmes and initiatives (including DRR and DM) are within the Pacific Region.

Note: This report is intended to complement separate reporting on the implementation of the HFA which may be done by members of the PDRMPN such as New Zealand¹ and Australia which have Official Focal Points for the implementation of the Hyogo Framework and other agencies/organisations such as the EU and so forth.

Contact officer

Position

Ms. Cristelle Pratt

Director, SOPAC

Address, City, Postal Code, Country

SOPAC Secretariat, Private Mail Bag, GPO, Suva,

Phone

(679) 338 1377

Fax

(679) 337 0040

E-mail

director@sopac.org; cristelle@sopac.org and mosese@sopac.org

Website

www.sopac.org / www.pacificdisaster.net

¹ New Zealand supports the work SOPAC is doing in assisting Pacific Island Countries to meet the HFA reporting requirements. New Zealand submitted their Interim National Progress Report on the Implementation of the HFA in July 2008

ACKNOWLEDGEMENT

This regional synthesis report on the implementation of the Hyogo Framework for Action 2005 – 2015 has been prepared by the Pacific Islands Applied Geoscience Commission (SOPAC) through the information received from a range of sources including the primary contact points of national authorities on disaster risk management in the Pacific region. As such, SOPAC would like to acknowledge their contributions.

The national authorities are known in the region as the National Disaster Management Office (NDMO). SOPAC has coordinated DRM capacity building activities with NDMOs and/or other relevant authorities in the following member countries: Cook Islands, Federated States of Micronesia, Fiji, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. Kiribati is attempting to establish an NDMO.

Other organisations that have contributed to this report are members of the Pacific Disaster Risk Management Partnership Network (PDRMPN) and these include: Australia Bureau of Meteorology (BOM), Australia Department of Foreign Affairs and Trade (DFAT), European Union – SOPAC partnership, Foundation of the Peoples of the South Pacific International (FSPI), Geological and Nuclear Science (GNS) of New Zealand, UN International Strategy of Disaster Reduction (UNISDR), Japan International Cooperation Assistance (JICA), New Zealand International Aid & Development Agency (NZ Aid), UN Office of the Coordination of Humanitarian Assistance (UNOCHA), OXFAM, the International Federation of the Red Cross and Red Crescent Societies (IFRC), UNICEF and WHO, including the relevant agencies of the Council of Regional Organisations (CROP). These CROP agencies that are members of the PDRMPN are: Secretariat of the Pacific Community (SPC), Secretariat for the Pacific Regional Environment Programme (SPREP), University of the South Pacific (USP), Fiji School of Medicine (FSMed), Pacific Islands Forum Secretariat (PIFS) and SOPAC.

This report was prepared by Kata Duaibe, Litea Biukoto, Netatua Pelesikoti and Mosese Sikivou of SOPAC's Community Risk Programme and done in partnership with the Secretariat of the UNISDR Asia-Pacific office with funding support provided by the World Bank Global Facility for Disaster Reduction and Recovery (GFDRR). Financial support from the GFDRR is gratefully acknowledged. The GFDRR is a partnership between Australia, Canada, Denmark, European Commission, Italy, Japan, Luxembourg, Norway, Spain, Sweden, Switzerland, United Kingdom and the World Bank.

ACRONYMS

Abbreviations / Acronym	Description
ACP	African, Caribbean and Pacific Group of States
ADB	Asian Development Bank
AFAC	Australasian Fire Authorities Council
BOM	Australian Bureau of Meteorology
CBDRM	Community Based Disaster Risk Management
CEO	Chief Executive Officer
CROP	Council of Regional Organisations of the Pacific
CRP	SOPAC Community Risk Programme
DFAT	Australia Department of Foreign Affairs and Trade
DM	Disaster Management
DRM	Disaster Risk Management (comprising DRR and DM)
DRMA	National Disaster Risk Management Arrangements (RMI)
DRR	Disaster Risk Reduction
EDF	European Development Fund
EOC	Emergency Operations Centres
EU	European Union
FRCS	Fiji Red Cross Society
FSM	Federated States of Micronesia
FSMed	Fiji School of Medicine
FSPI	Foundation of the Peoples of the South Pacific International
GA	Geoscience Australia
GFDRR	World Bank Global Facility for Disaster Reduction and Recovery
GNS	Institute of Geological and Nuclear Sciences, New Zealand
HfA	Hyogo Framework for Action
HLAT	High Level Advocacy Team
HYCOS	Hydrological Cycle and Observation System
IFRC	International Federation of the Red Cross and Red Crescent Societies
ISM	Island Systems Management
JICA	Japan International Cooperation Assistance
MOU	Memorandum of Understanding
NAP	National Action Plan
NCCA	National Council of Churches of Australia
NDC	National Disaster Centre
NMS	National Meteorological Service
NTF	National Task Force
NZAID	New Zealand International Aid & Development Agency
PCIDRR	Pacific Community-focused Integrated Disaster Risk Reduction Project
PDRMPN	Pacific Disaster Risk Management Partnership Network
PENTAG	Pacific Emergency Management Training Advisory Group

PIC	Pacific Island Country
PIFAC	Pacific Islands Framework of Action on Climate Change
PIFS	Pacific Islands Forum Secretariat
PIFSA	Pacific Islands Fire Services Association
PIP	Provisional Indicative Implementation Programme
PNG	Papua New Guinea
PNG NFA	PNG DRR and DM National Framework for Action 2005-2015'
Regional Framework	An Investment for Sustainable Development in Pacific Island Countries, Disaster Risk Reduction and Disaster Management, A Framework for Action 2005 – 2015: Building the Resilience of Nations and Communities to Disasters
REWS	Regional Early Warning Strategy
RMI	Republic of the Marshall Islands
SOPAC	Pacific Islands Applied Geoscience Commission
SPC	Secretariat of the Pacific Community
SPREP	Secretariat for the Pacific Regional Environment Programme
SUT	Swinburne University of Technology
TA	Technical Assistance
TAF/OFDA	The Asia Foundation/Office of US Foreign Disaster Assistance
UNDP	United Nations Development Programme
UNDP PC	UNDP Pacific Centre
UNFCC	United Nations Framework on Climate Change
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Reduction Secretariat
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
USP	University of the South Pacific
VCA	Vulnerability and Capacity Assessment
WASH	Water, Sanitation and Hygiene
WB	World Bank
WHO	World Health Organisation

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EXECUTIVE SUMMARY

This is a regional synthesis report on the progress of implementation of the Hyogo Framework for Action 2005 - 2015. The Hyogo Framework for Action has been adapted in the Pacific as a regional DRM policy document entitled *“An Investment for Sustainable Development In the Pacific Island Countries – Disaster Risk Reduction and Disaster Management A Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters”* (**Regional Framework**). This report uses the reporting guidelines prepared by the UNISDR to assist countries and organisations to respond to the reporting requirements that are set out in the Hyogo Framework for Action 2005-2015.

Governments of Pacific Islands Countries (PICs) adopted the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters, at the World Conference on Disaster Reduction, Kobe, Hyogo, Japan, 18-22 January 2005. In response to the global call for the implementation of the Hyogo Framework the Governments of PIC developed the Regional Framework which addresses the various hazard and disaster risks facing small island developing states, by proposing both preventative and remedial actions to manage the hazards and associated risks. Hazards in the Pacific pose enormous threats at both community and national levels. The “big ocean, small islands” context contributes to environmental, economic and social exposure of these nations and communities. Disaster risk reduction (DRR) and disaster management (DM) planning is often impeded by resource constraints and a serious lack of capacity in many Pacific island nations and communities². The disaster risk management (DRM) challenges faced by the region from the previous International Decade of Disaster Reduction (IDNDR) are somewhat still prevalent. As such the Regional Framework is intended to reduce these disaster risk management gaps through an ‘all hazards’ and ‘whole of government’ approach to reducing risks and vulnerabilities and increasing the resilience of Pacific communities.

The Regional Framework has six themes as follows:

Theme 1: Governance – Organisational, Institutional, Policy and Decision-Making Framework

Theme 2: Knowledge, Information, Public Awareness and Education

Theme 3: Analysis and Evaluation of Hazards, Vulnerabilities and Elements at Risks

Theme 4: Planning for effective Preparedness, Response and Recovery

Theme 5: Effective, Integrated and People-Focused Early Warning Systems

Theme 6: Reduction of Underlying Risk Factors

Each thematic area lists key national and regional activities with the theme’s expected outcomes at the end of the 10 year implementation period. There is an emphasis on disaster risk reduction to cover mitigation, prevention, adaptation or transfer of disaster risks and; disaster management to cover preparedness, early warning, response and recovery; and cross cutting issues such as governance, capacity building and awareness and education.

It is quite clear in the compilation of this report that most progress of the implementation of the Regional Framework within PICs has been possible with the assistance and/or the leadership of disaster risk reduction and disaster management development partners. In instances where

² Disaster Risk Reduction and Disaster Management (DRM) Framework for Action 2005 – 2015: An Investment for Sustainable Development in the Pacific Island Countries, paragraph 4, page 3.

implementation is quite successful in country, this is largely through the collaboration of the different government agencies of the implementing countries and or through strong partnership with community organisations or civil society organisations. However in the compilation of this report, one of the major challenges was in the obtaining of information and data from the National Disaster Managers Officers throughout the region. This however is not a reflection that there has not been any implementation in country, as from the experiences of in-country work of the PDRMPN that such work in disaster risk reduction and disaster management does exist.

The challenges that emerged from the review of progress in relation to the six thematic areas of the Regional Framework are summarised as follows:

- There is an emerging need for technical support to be resident in-country to lead in the implementing of the changes from the conventional approach of disaster management to the current emphasis of disaster risk management (disaster risk reduction and disaster management).
- Community participation and practices in disaster risk reduction and disaster management does exist but scattered amongst the different villages of some of the Pacific Island Countries where disaster risk management is being implemented right down to community level. As such there is a need for community engagement to be coherent and strengthened and the base of partners for such to be broadened.
- To strengthen end-to-end Early Warning Systems for all hazards.
- Continued partner collaboration at regional and international level
- The need to strengthen capacities at national level (NDMO, Meteorological Services, Hydrology Services) on their key issues and area of need.
- The need for robust governance and institutional arrangements for disaster risk management.
- For finance and planning arrangements of the region to be revised to incorporate disaster risk reduction / climate change adaptation and disaster management.
- Strengthen baseline data, particularly on the socio-economic impact of disasters to assist in focussed policies and programmes that address the needs of the most vulnerable groups (children, women and the elderly) which will also enhance humanitarian responses.
- A more proactive integration of disaster risk reduction / climate change adaptation within the educational system, from primary level through to tertiary institutions.
- Improved access and understanding of the use of scientific tools (e.g. GIS & remote sensing and modelling) to inform hazards, vulnerability and risk assessments.
- Specific skills development to enhance preparedness for disasters.
- Improve national access to funding for Disaster Risk Management through advocacy, technical support and dedicated resources.

The year 2009 has seen the establishment of the Pacific Platform for Disaster Risk Reduction and Disaster Management, with the objective of:

- Supporting the implementation of the Hyogo Framework for Action and the Pacific DRR and DM Framework for Action 2005-2015.
- Promoting regional cooperation; strengthening further coordination mechanisms, understanding, commitment and approaches for disaster risk reduction and disaster management in the Pacific.
- Reviewing progress of implementation of disaster risk reduction and disaster management in the Pacific and report to the Global Platform for DRR.
- Determine and prepare for the participation of Pacific states and other key stakeholders at the meetings of the Global Platform for DRR, a bi-annual event.

This should provide the basis to further enhance national capacity to identify areas where gaps still exist in the implementation of the two frameworks. The availability of reporting tools is meant to enhance the capacity of countries to be able to easily identify gaps that still exist. On the other hand, such tools would also enable development partners to collaborate effectively, avoid duplication and to disperse resources where most needed to reduce disaster risks.

1. BACKGROUND AND METHODOLOGY

1.1 Regional Framework Context

The Regional Framework was agreed to by officials attending the 12th Pacific Regional Disaster Managers' Meeting, 6-8 June 2005 in Madang, Papua New Guinea and endorsed by the Leaders at the 36th Pacific Islands Forum in Madang, Papua New Guinea held from 25 to 27 October 2005.

The Regional Framework aspires to building safer, more resilient Pacific island nations and communities to disasters so that the Pacific peoples may achieve sustainable livelihoods and lead free and worthwhile lives³.

The Framework's Mission articulates:

Building capacity of Pacific island communities by accelerating the implementation of disaster risk reduction and disaster management policies, planning and programme to address current and emerging challenges through:

- a. Development and strengthening of disaster risk reduction and disaster management, including mitigation, preparedness, response and relief/recovery systems;*
- b. Integration of disaster risk reduction and disaster management into national sustainable development planning and decision-making processes at all levels; and*
- c. Strengthening partnerships between all stakeholders in disaster risk reduction and disaster management.*

with its six themes:

Theme 1: Governance – Organisational, Institutional, Policy and Decision-Making Framework

Theme 2: Knowledge, Information, Public Awareness and Education

Theme 3: Analysis and Evaluation of Hazards, Vulnerabilities and Elements at Risks

Theme 4: Planning for effective Preparedness, Response and Recovery

Theme 5: Effective, Integrated and People-Focused Early Warning Systems

Theme 6: Reduction of Underlying Risk Factors

The Regional Framework has its origins in the Hyogo Framework for Action with an additional theme that specifically focuses on 'effective, integrated and people-focussed early-warning systems' given the unique vulnerable context of the Pacific region. Each theme has guiding principles; articulates expected outcomes by 2015 and identifies key national activities and regional activities to be achieved within the 10-year period.

³ Disaster Risk Reduction and Disaster Management (DRM) Framework for Action 2005 – 2015: An Investment for Sustainable Development in the Pacific Island Countries, paragraphs 1&2, page 5.



1.2 Hyogo Framework for Action

Governments of Pacific Islands Countries (PIC) adopted the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*, at the World Conference on Disaster Reduction, Kobe, Hyogo, Japan, 18-22 January 2005. The Hyogo Framework offers guiding principles, identifies five priorities for action, and practical means to guide countries in achieving disaster reduction for vulnerable communities. These five priority areas are:

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

Priority for Action 2: Identify, assess and monitor disaster risks and enhance early warning

Priority for Action 3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels

Priority for Action 4: Reducing the underlying risk factors

Priority for Action 5: Strengthen disaster preparedness for effective response at all levels

The Hyogo Framework also outlines the responsibilities of states, regional organisations and institutes, and international organisations for its effective implementation in the 10 year period.

1.3 Report Structure

This report is structured to reflect the parallels between the two frameworks. Progress reporting against the HfA is in the two chapters following this background chapter. Chapter 2 reports on progress made against the key regional activities by disaster risk management partners in the region. Chapter 3 reports on progress made in PICs in terms of the implementation of the key national activities outlined in the Regional Framework. To achieve the reporting requirement set out by the Hyogo Framework for Action (HfA), the subsections within the two main sections are sub-headed under the five priority areas for action of the HfA. Each thematic area of the Regional Framework is then listed alongside each priority area for action to show the parallels in thematic areas between the two frameworks. The core indicators for each thematic area or priority area for action have been taken from the listed key regional and national activities of the Regional Framework. The final section (Chapter 4) looks at key challenges faced in the compilation of this report as well as in the implementation of the thematic areas of the Regional Framework.

1.4 Methodology

This report has been compiled using a reporting 'template' discussed and agreed with the Secretariat of the UNISDR. The information included in it is sourced from various assessment reports of national authorities on disaster risk management and a synthesis of partner agencies' (donors, non-governmental organisations and civil society groups) projects on disaster risk management in the Pacific. As stated earlier, this report is intended to complement the national progress reports on the implementation of the HfA which have been prepared by Australia, New Zealand and some Pacific Island Countries (PICs) and the reports by members of the PDRMPN such as the European Union, the International Federation of the Red Cross and Red Crescent Societies (IFRC) and others.

2. THE CURRENT STATUS OF DISASTER RISK MANAGEMENT INITIATIVES IN THE PACIFIC REGION

2.1 Priority for Action 1

Ensure that disaster risk reduction is a national priority with a strong institutional basis for implementation

Relevant theme of the Regional Framework

Theme 1: Governance – Organisational, Institutional, Policy and Decision Making Frameworks

a. Core Indicator 1

Develop new and strengthen existing guidelines, tools and training programmes to assist national governments to mainstream disaster risk reduction and disaster management.

Level of Progress Achieved

1. A major focus of SOPAC over the course of 2007 and 2008 has been the continuing effort to adapt the Regional Framework at a national level within SOPAC member countries. In February 2006, SOPAC facilitated the establishment of the Pacific Disaster Risk Management Partnership Network (PDRMPN) which agreed at its inaugural meeting to support the development and implementation of DRM National Action Plans (NAPs) for Pacific Island Countries as well as to establish and support in an on-going manner a web information portal for DRM customised to suit the needs of Pacific countries. The PDRMPN was primarily formed to partner with member countries in the implementation of the Regional Framework.

2. To assist with this exercise, a set of guidelines for mainstreaming disaster risk reduction (DRR) and disaster management (DM) were developed by a sub group of the PDRMPN (UNDP PC, World Bank, SOPAC) to guide the mainstreaming process. The four phase process, essentially involves integrating the principles of disaster risk management into development plans, goals and objectives at national level, such as the countries national sustainable development plans or its equivalent. In this context, DRM is mainstreamed within national plans and policy, sectorally as well as cross-sectorally and in the national budgetary planning and allocation process. These guidelines were used to produce the National Action Plans (NAPs) on DRR and DM of the countries of **Vanuatu** (2006), **Republic of the Marshall Islands** (2007), and the **Cook Islands** as of 2008.



3. Support has also been provided to **Samoa, Solomon Islands** and **Palau** for the development of their NAPs. Samoa's "NAP" development is undergoing a process slightly varied from the other countries. Given the promulgation of Samoa's National Disaster Management Plan (NDMP) in 2006, it was decided that the Samoa NAP exercise comprise 2 components. First, SOPAC and partners would assist the implementation of elements of the NDMP that need to be addressed. The second phase of NAP implementation would include activities that would evolve from the implementation process of the NDMP implementation.

4. Efforts have also been made by UNDP PC and others to begin a NAP process in **Papua New Guinea** (PNG). In 2007 UNDP PC visited PNG to:

- ascertain progress with regard to implementation of the National Framework for Action on DRM. In 2005 PNG developed its own draft 'PNG DRR and DM National Framework for Action 2005-2015' (PNG NFA) that derives from and is consistent with the Hyogo Framework for Action and the Regional Framework. While the PNG NFA is still to be approved by the National Executive Council, it has effectively been adopted by PNG's National Disaster Centre (PNG NDC) and its work plans are structured and prioritised to address objectives of the NFA;
- determine the level of commitment and ownership by the Government of PNG to the NFA;
- review processes undertaken in developing the NFA in 2005;
- identify appropriate timing for a possible regional High Level Advocacy Team (HLAT) mission; and
- develop a strategy for future support by the PDRMP for PNG to develop a NAP.

5. In the development of existing National Action Plans within these countries, phase one is the advocacy phase where the objective is to ensure political support and commitment for DRM mainstreaming is forthcoming. The advocacy method is tailored to suit the country in which the NAP is being developed. In the case of **Vanuatu** and the **Cook Islands**, advocacy was based on individual meetings with relevant sector representatives. With the **Republic of the Marshall Islands** (RMI), one-on-one advocacy with the President of the Marshall Islands and senior Ministers of Government were undertaken and in addition a one day workshop on the need to mainstream disaster risk reduction and disaster management was conducted for parliamentarians while a NAP development workshop was conducted for the rest of RMI's DRM stakeholders. The NAP's of these 3 countries have since been endorsed and implementation begun.

6. In addition to assisting member countries in the development of their National Action Plans, SOPAC is also assisting with the reviewing and recommending of institutional arrangements for National Disaster Management Offices and for national disaster management systems. To date, this has been done through a review of the country's relevant legislation that governs disaster management and the updating of subsequent and relevant plans. In some instances, the review has resulted in organisational re-arrangement and/or recommendation for its autonomy as in the case for **Vanuatu**. The institutional arrangements have encompassed clearer arrangements for disaster risk reduction as opposed to the more conventional arrangements of disaster management alone. These reviews have been conducted for **Vanuatu, Republic of the Marshall Islands, Cook Islands, Palau, Fiji** and **Samoa**.

b. Core Indicator 2

Strengthen decision making through the use of information systems on hazards and their impacts.

Level of Progress Achieved

7. A number of information / resource systems exists which decision makers have been drawing on in some way or another for the basis of their decision making:

- PDRMPN
- Pacific Disaster Net
- Islands Systems Management (ISM)
- Pacific HYCOS for Integrated Water Resources Management

8. One of the objectives of the PDRMPN is for the strengthening of information sharing mechanisms on disaster risk reduction. One such initiative of the PDRMPN is the Pacific Disaster Net (www.pacificdisaster.net), an information portal on disaster risk reduction and disaster management which, in addition to being a tool that promotes research and collaboration and to improve knowledge management, is essentially a tool to support national action planning and decision making, as it is a database that also holds reports, disaster risk management plans and so forth, alerts and notifications of events as well as audio and visual files on DRM. The portal is a useful tool for sourcing information to inform decision making as it provides at best the most recent and up-to-date real time alerts and notifications. Besides, notifications, there is also a discussion forum which could be useful for the sharing of information on the areas of governance, Risk Assessment, Early Warning and Monitoring, Disaster Risk Management and training and Tools.

9. The European Union (EU) – European Development Fund (EDF) 8&9 “Reducing vulnerabilities of the Pacific ACP⁴ States through integrated planning and management (Island Systems Management – ISM) at the sectoral level, especially in the sectors dealing with hazards, aggregates and water resources” is facilitating data sharing to support decision making having installed web-based MapServers using Internet technology and Open Source software. The MapServers were installed in each of the 14 countries involved in the project hosting spatial data such as satellite imagery, high resolution bathymetric and topographic data – essential baselines to model and map risks to sea-level rise, storm wave and tsunami inundation. Understanding risks can assist disaster managers and planners to improve disaster response and development planning in particular areas. The MapServers are also used as a repository for other data formats and reports.

10. For hydrological hazards, the Pacific Hydrological Cycle Observing System – ‘Pacific HYCOS’ Project⁵ has an overall objective of attaining a sustainable level of capacity in Pacific Island Countries to be able to assess and monitor the status and trend of PIC’s water resources, and to provide the water-related information and hazard warnings needed to support national social and economic development and environmental protection. Of relevance to this report are two of the seven part components of the project: a) flood forecasting capability and b) drought forecasting.

a. The flood forecasting component involves: the design of a real time data acquisition and transmission system for rainfall and river level data that is appropriate for small Pacific Island Countries (PICs); identifying their national needs; once the catchment has been selected, the design installation, procurement of necessary equipment; development of forecasting models specific to each river basin; the training of staff in its operation and maintenance; and

⁴ The Pacific ACP States are: Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Solomon Islands, Samoa, Tonga, Tuvalu, Vanuatu.

⁵ The Pacific HYCOS Project was developed under the framework of the World Meteorological Organizations (WMO) World Hydrological Cycle Observing System (WHYCOS) whose focus is “to improve the basic observation activities, strengthen the cooperation and free exchange of hydrological data at river basin, national, regional and global levels”. Pacific HYCOS is being implemented in 14 Pacific countries including Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

the establishment of arrangements to convey forecasts to disaster management authorities and the public. The flood forecasting system then informs flood mitigation approaches and plans and development related decision making. At present the system is being developed and implemented in 14 PICs.

b. The intention of having drought forecasting systems within PICs is to develop an improved understanding of the meaning and application of measurements of drought, its impact on water resources, timely and accessible forecasts and its consistent delivery to the meteorological services, disaster managers and water managers, building the capacity of staff in the relevant national agencies for drought forecasting, response and mitigation. Work has commenced in Kiribati for this.

c. Core Indicator 3

Develop guidelines for appropriate indicators for monitoring and evaluating disaster risk reduction and disaster management activities at regional, national and local levels.

Level of Progress Achieved

11. The development of DRM National Action Plans (NAP) is an eight step process from the initial planning, to advocacy, situation analysis, development, costing and approval to its implementation, monitoring and evaluation. The guidelines for monitoring and evaluation of DRR and DM activities at national level are encompassed within the “Mainstreaming Disaster Risk Management Conceptual Framework and Step by Step Guide for Pacific Island Countries”. The guidelines are then adapted to suit the particular country’s context and needs. Within the NAPs, monitoring and evaluation is the responsibility of the sectors / agencies that is a partner to its implementation. In addition, SOPAC has developed an online monitoring tool to measure progress against the implementation of the Regional Framework, where the appropriate indicators are the key national and regional activities outlined under the six thematic areas of the Framework. The online monitoring tool is designed to generate country reports on SOPAC’s member countries’ progress towards its implementation as well as to measure the region’s progress against the listed key regional activities. The reports generated will for countries contribute to their HfA reporting commitments too.

d. Core Indicator 4

Strengthen CROP collaboration and regional partnerships, adopting an integrated and programmatic approach to support disaster risk reduction and disaster management at the national level.

Level of Progress Achieved

12. Under the Pacific Plan⁶, CROP organisations were called upon by Pacific Leaders to assist member countries in the development and implementation of national action plans consistent with the principles of the Regional Framework. International partners for DRM are also encouraged to support the implementation of the Framework through closer collaboration and partnerships at regional, national and community levels. The Pacific PDRMPN was formed to facilitate the implementation of the Regional Framework for Action 2005 – 2015, strengthen information sharing mechanisms on disaster risk management and be a forum for dialogue and collaborate on projects that address disaster risk management in communities; and sharing of resources and expertise. Memberships of the partnership are drawn from:

- regional organisations whose programmes address disaster risk reduction such as land-use policy development programmes, pandemics and structural measures for mitigation and adaptation;

⁶ The Pacific Plan proposes a new and innovative approach to the unique challenges that Pacific Island Countries face through a framework of greater regional cooperation and integration. (www.forumsec.org.fj).

- donor agencies that are active in disaster risk reduction and disaster management in the region;
- relief, response and recovery agencies;
- Non-Governmental Organisations (NGOs) and community based agencies that particularly work at community level; and
- technical agencies.

13. Since the establishment of PDRMPN, a subgroup has been driving the development of National Action Plans for DRM in the countries previously mentioned under core indicator 1 and the information portal on disaster risk management – Pacific Disaster Net (www.pacificdisaster.net). Another notable achievement has been the piloting of Emergency Health and Disaster Management workshop from within the Fiji School of Medicine (FSMed), which is to run for the next five years from 2008.

14. The PDRMPN also facilitates the Pacific Framework for Humanitarian Assistance comprising a Pacific Humanitarian Team of all disaster response actors in the region who play a regional role in humanitarian response. The intention of such a framework is to improve the effectiveness of human response by ensuring that greater beneficiaries are reached with a more comprehensive needs-based relief and protection, in a more effective and timely manner. This effort, though ambitious is in line with international efforts to improve effectiveness of humanitarian responses right across the globe. The agencies are formed around six key cluster areas, namely: a. health and nutrition; b. Water, Sanitation and Hygiene; c. Emergency Shelter & Camp management; d. Logistics; e. Information Management and f. Protection. For the Pacific, a collaborative approach to humanitarian response was triggered by the Solomon Islands Tsunami of 2007. In the floods of Fiji and the Solomon Islands in January 2009, the effectiveness of such could be witnessed in the thorough assessment of the affected areas by the agencies of the various clusters.

2.2 Priority for Action 2

Identify, assess and monitor disaster risks and enhance early warning systems

Relevant Theme of the Regional Framework

Theme 3: Analysis and Evaluation of Hazards, Vulnerabilities and Elements at Risk

Theme 5: Effective, Integrated and People-Focussed Early Warning Systems

Theme 3: Analysis and Evaluation of Hazards, Vulnerabilities and Elements at Risk

a. Core Indicator 1

Develop, and / or improve and promote the application of tools and methodologies for assessing hazards and vulnerabilities.

Level of Progress Achieved

15. SOPAC has assisted the 14 Pacific ACP countries through the EU EDF 8&9 Fund in Reducing the Vulnerability of Pacific ACP States through integrated planning and management (ISM) at the sectoral level, especially in the sectors dealing with hazards, aggregates and water resources. EDF 9 is an extension of the EDF 8 Funding to include an additional six countries other than the

initial eight that the EDF 8 funds covered. The project focused on 3 key focal areas, one of which is the development of comprehensive hazard and risk management tools for the safeguarding of communities. This focal area addressed the limitation experienced by disaster management officials and technicians in-country in terms of ready access to data in an appropriate format. As such, the MapServers together with simple collations of basic data coupled with appropriate training to officials in the development of simple hazard maps utilising basic GIS applications has been reported under the project as a positive outcome for all participating states. The use of such applications was aptly illustrated following the 02 April 2007 earthquake and tsunami in the Western Province of the Solomon Islands where analysis of pre- and post-event satellite imagery, coupled with ground truthing has enabled tsunami run-up and landslide prone areas as well as tectonic zones to be identified (Rao, 2008). In terms of mitigation of risks, two successful projects evolved out of this: the development of a flood early warning system for Navua Delta, **Fiji** and a flood management plan for Apia in **Samoa**.

16. The Pacific Cities project has been a long-term project of the SOPAC secretariat since 1996. The aim of the project was to quantitatively assess risk to people and property from natural and man-made hazards in selected, urban areas of the Pacific. The last of the subject areas, Lae, PNG was finally completed in 2008 with appropriate hardware / software and training provided across the sectors in Lae; and baseline hazard and vulnerability data distributed widely to the relevant agencies of Lae, in August 2008 and also used for the production of the city's hazard maps. The maps were presented at the Remote Sensing / Geographic Information Systems (RS/ GIS) Conference of 2008, at the University of the South Pacific (USP) in Suva, Fiji.

b. Core Indicator 2

Research and compile statistical information and data on disaster risks and impacts including time series and cross-sectoral data at national and regional level.

Level of Progress Achieved

17. Another initiative of the SOPAC-EU EDF project "Reducing Vulnerabilities in Pacific ACP States" is capacity development in installing and populating MapServers in the 14 countries. The MapServers are accessible over the Internet and have an interface that allows the user to query the maps and display relevant information. The ED project specialists also populate the MapServers with relevant data and information on disaster risk and impacts as well as through the Pacific Disaster Net (www.pacificdisaster.net), a web portal for all disaster risk reduction and disaster management related information for the region. The database also holds information on time-series events that has affected the Pacific region and continues to be a work in progress by cataloguers.

c. Core Indicator 3

Strengthen technical and scientific capacity and resources to enhance data collection, collation, analysis, synthesis, dissemination, maintenance, data sharing, protocols and E-networking.

Level of Progress Achieved

18. A series of Geo-data management training has been conducted across SOPAC's member countries in support of disaster risk management. The training objective was to provide the necessary skills and technical competency with in-country staff of **Cook Islands, Federated States of Micronesia (FSM), Fiji, Solomon Islands, Palau** and **Vanuatu**; to support national disaster risk management activities.

d. Core Indicator 4

Strengthen post-disaster hazard assessments and technical assistance programmes.

Level of Progress Achieved

19. The 14th Regional Disaster Managers meeting reiterated the role of SOPAC in providing post-disaster hazard assessments and technical assistance programmes to their member countries. This decision is consistent with the decision of the 36th SOPAC Governing Council in relation to the Regional Institutional Framework (as articulated in paragraph 19b of the 2007 Forum Communiqué), whereby SOPAC was to continue to provide coordination of post-disaster technical assessment work, subject to the availability of appropriate capacity. In addition to this provision, SOPAC was also directed to enhance this service by supporting the implementation of an inter-NDMO support mechanism that would be mobilised following extreme events. Post-disaster hazard assessments and technical assistance has since been provided to the government of the Solomon Islands following the Tsunami of April 2007, and to the assessment teams (comprising of difference agencies) of Fiji and the Solomon Islands following the floods within this respective countries in early January 2009.

Theme 5: Effective, Integrated and People-Focussed Early Warning Systems

a. Core Indicator 1

Complete inventories and needs analyses of regional early warning systems and identify priorities for improvements that will better support national needs.

Level of Progress Achieved

20. A first step towards this has been in the development of a Regional Early Warning Strategy (REWS) aimed at identifying a range of initiatives for early warning for the different hazards of PICs and for this to be a collaborative approach between PICs and partner/donor organisations. The REWS was endorsed by National Disaster Managers at the 13th Regional Disaster Management Meeting in Majuro, Marshall Islands and the 36th SOPAC Governing Council in Tonga in 2007. The implementation of the strategy is being pursued through a number of mechanisms such as the development of NAPs for PICs. With regard to the specific activity within the strategy to address tsunami early warning and response, Tsunami Capacity Assessments have been conducted for nine PICs (in date order): **Tonga, Solomon Islands, Fiji, Samoa, Vanuatu, Cook Islands, Kiribati, Papua New Guinea** and **Nauru**. For Niue, a preliminary assessment visit has been carried out. The project is funded by AusAID, and led by the Australian Bureau of Meteorology, in partnership with SOPAC, Emergency Management Australia and Geoscience Australia. By undertaking an assessment of the capacity of individual nations to manage tsunami events and risks, the project aims to better guide donor funding towards achieving targeted improvements in the PICs to receive, communicate, prepare for and respond to tsunami warnings and mitigate tsunami risks.

b. Core Indicator 2

Support the provision of regional forecasting, and early warning and monitoring systems of hazards such as tropical cyclones, droughts, flooding, storm surges, tsunamis, earthquakes and volcanic activity.

Level of Progress Achieved

21. With regard to volcano risks, the Melanesian Volcanological Network (MVN) was formed and established in 2008 to provide a cost effective and sustainable operational framework that would allow for the sharing of resources (equipment and technical personnel) amongst the Melanesian Countries, namely **Solomon Islands, Vanuatu** and **Papua New Guinea**. The intention of the MVN is to establish a sub-regional facility that: supports capacity development in volcanological monitoring; provides essential equipment to conduct monitoring during times of significant volcanological activity with a view to informing emergency planning and response; and supports education and public awareness raising.

22. The MVN concept was presented to the Melanesian Spearhead Group meeting on 26 May 2008. At the meeting, it was proposed that SOPAC work with representatives from Papua New Guinea, Solomon Islands and Vanuatu to progress the development of the Network. Accordingly, SOPAC met with country stakeholders in Honiara during 3-4 September 2008 to develop the basis of an operating framework for the Network and convened a Donor Roundtable meeting on 5 September 2008 to enable potential country stakeholders and donors to discuss key principles and operations for the Network. Issues be considered in the Donor Roundtable include:

- financial operations (funds and asset management, accountability etc.); and
- donor support for the Network.

23. Since the donor meeting SOPAC formally wrote to donors such as Australia and New Zealand in January 2009 seeking formal support for the MVN. Comments from Australia have been received, and feedback from New Zealand awaited.

24. Another initiative that has been undertaken for the Pacific is the review of early warning (weather) services for the Pacific. The current arrangements for early warning systems for weather and climate change has been reviewed and a policy paper produced by a Technical Working Group which was established for this purpose. The policy paper was tabled at the Pacific Island Forum Leaders Meeting in 2008, requesting regional organisations⁷ to coordinate urgently required strengthening of current regional services delivered by the Regional Specialised Meteorological Centre (RSMC) Nadi/Fiji National Meteorological Service (FMS). In addition to the review, support for RSMC in Nadi, Fiji was provided by the Australian Bureau of Meteorology, with training and IT systems support provided for **Fiji, Vanuatu, Samoa** and **Tonga**.

25. Under the Phase II Pacific Islands Climate Predictions Project (PICPP II), NMS are improving their capacity to provide accurate and easily understood information for decision making. In Fiji, the NMS is providing climate information directly to farmers in formats that will be easily understood and applied in their planting/replanting and harvesting decision-making, particularly in the sugar industry. The Bureau of Meteorology of Australia manages this project in partnership with NMS around the Pacific.

26. Specialist tropical cyclone meteorologist support has been provided to the Regional RSMC Nadi, through AusAID funding under the Pacific Governance Support Program (PGSP). BOM has provided in-kind support to the RSMC in terms of expertise to upgrade data processing, communications, and satellite data reception software and hardware. A new radar (near Labasa) station, fully funded by the Fiji Government is currently being installed by BOM. The three phases of RANET (radio and internet for the communication of hydro-meteorological and climate related information) project have been implemented by BOM with NZ and USA to improve last mile communication of weather and climate information including warnings.

⁷ The regional organisations are namely the Pacific Islands Forum Secretariat (PIFS), the Pacific Regional Environmental Programme (SPREP) and the Pacific Islands Applied Geoscience Commission (SOPAC).

27. In terms of flood risks, the Pacific HYCOS Project provides an opportunity for the installation of flood monitoring and forecasting equipment in Pacific Island Countries. Pacific-HYCOS is being undertaken as part of an overall regional initiative to improve the management and protection of Pacific Island Countries' freshwater resources, through the provision of a water resources information base in support of water resources management systems. The Pacific HYCOS Project specifically focuses on the deployment of appropriate instrumentation, training and capacity building, strengthening of national water resource databases, development of a regional water resource database, and the promotion of sustainable water resource development; this includes flood and drought forecasting systems. Flood monitoring equipment has been installed for the Navua catchment in Fiji and the system is to be implemented in 14 other catchments.

28. In terms of drought forecasting, component 3 of the Pacific HYCOS Project is to develop a common approach to drought forecasting in Pacific Island Countries. This component would involve existing meteorological and hydrological data analysis; recent drought impact analyses; development of mitigation and management plans; development of rainfall and stream flow forecasting model; low flow equipment installation; standardisation of drought forecasts; training workshops in drought forecasting, response and mitigation; development of public education materials on drought preparation; application of drought forecasting to rainwater harvesting; and drought response policy and plan development .

c. Core Indicator 3

Integrate national and regional early warning systems into the global networks and vice-versa.

Level of Progress Achieved

29. The Emergency Managers Weather Information Network (EMWIN) system is one such example of a global network whose services is available for use by SOPAC member countries. The EMWIN facility was established within SOPAC member countries' NDMOs in the late 1990s. SOPAC continues to provide support for the maintenance of EMWIN systems.

30. The current phase (Phase IV) of the South Pacific Sea Level and Climate Monitoring Project (SPCLCMP) is another such initiative. The project was commissioned in 1991. It provides accurate records of sea level trends across the region and specifically at the 12 long-term sea level monitoring stations of the observing network⁸ established by the project. The data collected by the project over more than 15 years provides the longest and most comprehensive and most accessible record of sea level behaviour in the region. This dataset is the primary regional source of information regarding sea level response on climatological and seasonal annual time scales. The dataset is managed by the project and is made available to a wide range of stakeholders and users in the region and in the wider international community.

31. This project complements other global and regional efforts to build and maintain long-term datasets. It is anticipated that there may be further phases of the project, beyond phase 4 which will be completed at the end of 2010, however the Australian Government has yet to make a decision in that regard.

32. The Pacific Islands Climate Prediction Project (PI-CPP) is a project aimed at improving seasonal climate predictions for multi-sector applications and is in its second phase of implementation. It is scheduled to end in 2009. At the end of the project implementation, the NMS of each participating country (**Papua New Guinea, Solomon Islands, Vanuatu, Kiribati, Tuvalu, Fiji, Tonga, Samoa, Niue** and **Cook Islands**) are to have software tailored for use in its location, and a thorough understanding of how seasonal climate prediction services can be applied to support climate-sensitive decision making in industry and government. Key representatives of

⁸ Cook Islands, FSM, Fiji, Kiribati, Nauru, PNG, Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu

climate-sensitive activities (e.g. agriculture, water management, disaster mitigation) will have received training in the effective use of climate predictions in a risk management context. It is hoped that in turn, the growth in productivity and efficiency that will follow in climate-sensitive industries will naturally flow through to better food security, improved public health, better managed water resources and more robust national economies.

2.3 Priority for Action 3

Use knowledge, innovation and education to build a culture of safety and resilience at all levels

Relevant Theme of the Regional Framework

Theme 2: Knowledge, Information, Public Awareness and Education

a. Core Indicator 1

Coordinate, develop and promote the process of accreditation for existing and future disaster risk reduction and disaster management training programmes.

Level of Progress Achieved

33. In relation to the use of formal education as a means of building a culture of safety and resilience, SOPAC also, as part of a partnership arrangement with The Asia Foundation/Office of US Foreign Disaster Assistance (TAF/OFDA) supports the provision of training courses at regional and national level for PICs. A suite of six courses is offered through this arrangement and these have been accepted as recognition of prior learning for a post-graduate certificate in disaster management offered by the Swinburne University of Technology of Melbourne, Australia.

34. Swinburne University of Technology (SUT) (Melbourne, Australia) offers a Post-Graduate Certificate in Disaster Management by distance learning. Six Pacific island nations have participated in this programme which commenced in 2004. Two have successfully completed the programme. The challenge at the moment is to develop a “regional” adaptation of the SUT programme with the University of the South Pacific. The continued dialogue with USP on the development of a “local/regional” programme is still on the agenda.

35. The TAF/OFDA Programme training courses have been implemented at the sub-regional level and at national levels in the **Cook Islands, Federated States of Micronesia, Fiji, Guam, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu** and **Vanuatu**.

b. Core Indicator 2

Promote and support the integration of disaster risk reduction and disaster management education and training into formal education sectors (i.e. schools / universities / technical institutions etc).

Level of Progress Achieved

36. At the 3rd Annual Pacific Disaster Risk Management Partnership Network meeting in 2008, the FSMed noted its commitment to work with NDMOs, and in close collaboration with relevant government departments to lobby their governments to recognise the need for emergency health education and have it incorporated into the FSMed curriculum as a means to address disaster risk management. In addition, the Meeting called for an Oceanic Chapter of the World Association for Disaster and Emergency to be established under the FSMed and encouraged Partners to collaborate on this accordingly. Since the meeting, the first Emergency Health and Disaster Management Workshop was coordinated and convened by FSMed in collaboration with Monash University in October 2008 for health and disaster response workers. This was the first phase of what is to be the department's long-term strategic plan to institutionalise emergency health and disaster management training over five years.

c. Core Indicator 3

Support, and where appropriate, coordinate and conduct regional or national training activities.

Level of Progress Achieved

37. A number of training programmes are coordinated in the region by the Pacific Red Cross Movement and the TAF/OFDA Pacific DRM Programme. The Pacific Red Cross Movement's DRM Training Programme is essentially to deliver standard training in emergency response, regional disaster response training and integrated disaster preparedness / risk reduction and community-based health training. Coordinating and delivering standard training in emergency response and regional disaster response and disaster risk reduction to their national societies in the Pacific; development and implementation of training modules on community health and the relevance of disaster preparedness for maintaining community health. The TAF/OFDA Pacific DRM Programme offers training at regional and national level in a suite of six courses; Risk Programme Management, Emergency Operations Centres (EOC), Exercise Management (ExMan), Introduction to Disaster Management (IDM), Initial Damage Assessment (IDA) and the Training for Instructors (TFI).

38. In 2008, following on from a regional course conducted by the International Federation for the Red Cross / Red Crescent, the **Fiji Red Cross Society (FRCS)** in partnership with **UNDP PC** and **TAF/OFDA** delivered a pilot national Vulnerability and Capacity Assessment (VCA) training course. Participants at the pilot course were Red Cross volunteers from the different FRCS branches around Fiji, and representatives from Navua whose involvement stemmed from the (2006-07) SOPAC Navua Flood Early Warning project. In the same year, **UNDP PC** also conducted VCA studies in various villages in Navua while the **FRCS** also conducted VCA studies in different locations around Fiji through its branches.

39. Likewise, in 2008, under the Pacific Community Focused Integrated DRR project, the **National Council of Churches of Australia (NCCA)** through its national partner the Fiji Council of Churches (FCC) adopted and adapted courses from the TAF/OFDA suite of training courses and the VCA course to deliver DRM training for eight field project officers (FPOs). These FPOs are now assisting selected villages around Fiji to establish a community DM committee and develop a community DM plan. The same process and activity is being duplicated in Vanuatu, Solomon Islands and Tonga.

d. Core Indicator 4

Provide guidance for the design and development of appropriate public awareness and education materials and resources.

Level of Progress Achieved

40. The Pacific Emergency Management Training Advisory Group (PEMTAG) comprises SOPAC, TAF/OFDA, UN Office of the Coordination of Humanitarian Affairs (UNOCHA) and the International Federation of Red Cross and Red Crescent Societies (IFRC). It provides a forum for agencies involved in the design and delivery of emergency management training and development within the region to work together to ensure that through partnership arrangements there is an integrated regional approach to the building of national capacity in the long term.

e. Core Indicator 5

Support countries to establish integrated national information systems for the collection and management of comprehensive data and information for disaster risk reduction and disaster management.

Level of Progress Achieved

41. A number of initiatives are being pursued by SOPAC and members of the PDRMPN in this regard. The Pacific Disaster Net (PDN) is a web information portal developed for the region to bring together DRM-related documents including reports and maps, events and initiatives on a central platform to assist countries and partners in accessing and using relevant information for the development and implementation of DRM initiatives. PDN will be enhanced with additional input through an upcoming Technical Assistance (TA) project funded by the ADB on Regional Partnerships for Climate Change Adaptation and Disaster Preparedness. The ADB TA will develop eight national risk databases and a regional database for the Pacific. This TA is linked to the World Bank's Pacific Risk Financing Initiative.

f. Core Indicator 6

Provide national disaster risk reduction and disaster management organisations access to common information systems with links to other central websites.

Level of Progress Achieved

42. PDN has been developed and was officially launched in September 2008, to assist member countries in the implementation of the Regional Framework. The web portal and information system can be accessed at www.pacificdisaster.net. It is designed to be the largest and most comprehensive information resource for all stakeholders in relation to disaster risk management for the Pacific Island Countries. The portal is for DRM stakeholders.

g. Core Indicator 7

Support countries to develop capacity to conduct comprehensive disaster-impact assessments and cost-benefit analysis of disaster risk reduction and disaster management measures.

Level of Progress Achieved

43. A number of cost-benefit analyses for disaster management and disaster risk reduction have been undertaken for the region. For this reporting period, support has been provided to Fiji and Samoa in this regard. For Fiji, a cost-benefit analysis of Navua's Flood Warning System influenced the government's decision to invest in the installation of a telemetric rainfall and river level gauging system. In Samoa, an economic assessment of flood management options for the lower Vaisigano catchment, Apia, Samoa was completed in 2007. The purpose was to assess the cost-benefit of implementing certain structural and non-structural flood management options for the lower Vaisigano catchment area and to use the results to guide development policy on floodplains. The cost-benefit analysis was conducted using the flood hazard maps for the area combined with the household and business surveys. The survey teams were trained prior to data collection being carried out.

h. Core Indicator 8

Continue development of trainers and training management systems through the strengthening of the regional training advisory group.

Level of Progress Achieved

44. Other than the Training for Instructors Course (TFI) provided in-country for TAF/OFDA, PENTAG also has a longer term objective of establishing linkages with and a support structure for those natural disaster training advisory / working groups already functioning in PICs.

2.4: Priority for Action 4

Reduce the underlying risk factors

Relevant Theme of the Regional Framework

Theme 6: Reduction of Underlying Risk Factors

a. Core Indicator 1

Provide scientific support and information on hazards and risks to enable the effective application of appropriate disaster risk reduction tools.

Level of Progress Achieved

45. SOPAC in delivering services to the region has worked with development partners and national counterparts on initiatives such as:

- Pacific Disaster Net www.pacificdisaster.net, an online portal of DRM-related information for the Pacific developed with UNDP PC, IFRC and UNOCHA.
- Post-disaster technical assessments that capture lessons learnt for reconstruction as well as inform development planning.
- Technical advice for hazard and risk assessment contributing to early warning, disaster management and disaster risk reduction.
- EU funded Reducing Vulnerabilities Project with the flood warning system in Fiji, multi-temporal coastal change (erosion) analyses, integrated flood risk management including

flood modelling and mapping in Samoa, installation of MapServers, GIS and RS training, tsunami modelling in Niue and Tonga and tsunami run-up maps in the Solomon Islands to guide the reconstruction effort.

- Web-based initiatives which include national MapServers (www.sopac.org/maps) in all 14 Pacific ACP countries and SOPAC's GeoNetwork <http://geonetwork.sopac.org> with high-resolution imagery and bathymetry.
- World Bank's Pacific Catastrophe Risk Financing Initiative which uses data collected and compiled during the Pacific Cities Project to support risk reduction activities. These datasets included infrastructure, critical facilities, building location and characteristics (elevation, construction type, and function), seismic microzonation, topography and bathymetry. The datasets include vector data as well as raster, such as high-resolution satellite imagery. SOPAC is the quasi repository of tabular and spatial data for Pacific countries making it easier to share data with Partners once approval has been given by the countries concerned. The SOPAC – Pacific Disaster Centre Memorandum of Understanding (MOU) identifies SOPAC as the Pacific node of the Asia Pacific Hazard Information Network providing opportunities for data sharing (high-resolution satellite imagery, hazard and risk information).
- In-country GIS & RS training and support to member countries. This includes the development of tabular and spatial databases to support their work programmes, customised interfaces to automate routine procedures as well as troubleshoot problems. The SOPAC GIS&RS unit also provides technical support as may be required. The unit provides specific support in relation to raster image analysis for forest cover mapping and radar image interpretation for post flood assessments. Applications for raster analysis are being developed as the need arises.

b. Core Indicator 2

Strengthen information-sharing mechanisms on disaster risk reduction.

Level of Progress Achieved

46. The Reducing Vulnerability of Pacific ACP States Project promoted the concept of ISM; recognising the need for integrated sectoral planning and management to effectively reduce vulnerabilities of small island states. One information sharing mechanism to support ISM are the MapServers (www.sopac.org/maps) or Resource Information Centres which host technical data collected or collated through the main components of the project i.e. water and sanitation, coastal processes including aggregates and hazard and risk. The MapServers allow a broad range of users to share important geographical and geological information over the Internet. The server utilises open-source software to manage and provide easy access to interactive maps and data. Part and parcel of this project was the extensive training of participating country interns and key technical personnel. Country interns were equipped with tools to assist them in facilitating project activities incountry. The equipment included hardware, in the form of the MapServer, desktop computers, printers; multimedia projector and laptop; open-source software, commercial software such as Microsoft Office products, GIS software MapInfo and image analysis software ERDAS IMAGINE. A series of in-country multi-stakeholder training workshops were conducted to rectify satellite imagery and aerial photographs including their applications; develop GIS applications to support agency activities; and helped build a small cadre of technicians to then provide GIS&RS support to other agencies. Medium to long-term attachments from **Samoa, Fiji, Tuvalu, Solomon Islands, Kiribati** and **Tonga** were placed with the ICT unit in SOPAC for hands-on training in MapServer fundamentals; data acquisition techniques; and data verification before uploading data to in-country MapServers. Country Interns were also given the opportunity to meet with ICT experts from the region at PacINET, the Pacific's annual IT meeting and its associated workshops.

47. The ISM or Resource Information Centre has had mixed success with the participating states with regard to the updating of data by personnel at national level and the optimum and effective use of the MapServers. This is largely due to the varying capacity within countries and agencies to retain trained staff and adequately host and maintain the MapServers keeping in mind the cost of Internet access. Some countries have reassessed their need to have the MapServers accessible via the Internet opting instead to have them linked within an intranet. To adequately maintain Resource Information Centres, countries will need to commit resources as well as determine the best options for making data available to stakeholders. Until then SOPAC, under the ICT outreach functions under the Community Lifelines Programmes will continue to assist with server upkeep, backup and data uploads.

48. The acquisition of satellite imagery together with multibeam bathymetric data collected under the project form invaluable datasets for resource assessment and mapping. Of particular use has been the utilisation of time-series imagery data from a variety of sources (satellite imagery, historic aerial photography) to assess temporal and spatial variation of coastlines. This has proved more effective and cheaper than the older system of regular beach profiling of selected sites with the added ability to cover larger areas, i.e. whole coastlines. Bathymetry or seafloor mapping and topography are the essential baselines for all forms of hydrodynamic modelling; such as sea-level rise incursion, storm wave impacts, tsunami and inundation.

49. The Pacific Disaster Net is a major initiative that is being developed to fulfill this purpose and will do so by integrating the relevant data and information tools and packages over time.

c. Core Indicator 3

Support the development of guidelines for hazard resistant buildings including appropriate technology where applicable.

Level of Progress Achieved

50. A school retrofitting project is being implemented in six schools from Suva, Fiji, with support from the United Nations Centre for Regional Development (UNCRD) and the Fiji NDMO. The project, a pilot for the Pacific is part of the UNCRD *"Reducing Vulnerability of School Children to Earthquakes"* project for the Asia-Pacific region under the UN Department of Economic and Social Affairs (UN-DESA). SOPAC is helping countries around the region with the project. To date, the retrofit has been completed for one school only, which is the Suva Vocational School.

d. Core Indicator 4

Support the incorporation of disaster risk reduction measures in key areas such as land-use policy, development and practice, and physical infrastructure.

Level of Progress Achieved

51. The Inaugural Pacific Regional Disaster Risk Management Meeting for Pacific CEO's of Finance / Planning and Disaster Management 2008 was convened to support an improved effort to address particularly the mainstreaming of disaster risk considerations into national planning and budgetary systems within the Pacific. By utilising such initiatives the Pacific hopes to demonstrate a greater commitment to the 'risk proofing' of land use policy and building policies and practices.

52. Fiji and other countries have developed national building codes and these are enforced with mixed measures of success. A number of issues involving land tenure systems and practices have inhibited progress in some countries.

e. Core Indicator 5

Support the development of financial disaster risk-sharing mechanisms, particularly insurance, re-insurance and other financial modalities for risk transfer.

Level of Progress Achieved

53. A World Bank initiated study on a Pacific Catastrophe Risk Financing Initiative is being conducted for the Pacific. The aim of the study is to investigate the options for affordable and effective sovereign catastrophe risk financing solutions, including a Pacific Catastrophic Risk Insurance Pool as a financial vehicle to help Pacific Island states cover their exposure to natural disasters. The in-country partners have largely been NDMO. The catastrophe risk insurance study is to be conducted in two phases. The first has involved the following countries **Cooks Islands, Fiji, Papua New Guinea, Samoa, Solomon Islands** and **Tonga**; where country-specific risk models were developed. The models will be used to develop country-specific loss risk profiles and to assess the feasibility of catastrophe risk financing and insurance options. The second phase will be with the other Pacific countries not part of the first phase.

2.5 Priority for Action 5

Strengthen disaster preparedness for response

Relevant Theme of the Regional Framework

Theme 4: Planning for effective Preparedness, Response and Recovery

a. Core Indicator 1

Support the strengthening of disaster management capacities and planning arrangements at national level.

Level of Progress Achieved

54. One of the core areas of SOPAC CRP's work plan is to support the strengthening of disaster management capacities and planning arrangements with their member countries. This includes the distribution of disaster management planning guidelines as well as to review / strengthen the national disaster management arrangements and their institutional plans as well as the determining of their capacities for early warning. At present, national capacity for tsunami early warning is being assessed for Pacific Countries through a collaborative effort with the Australian Bureau of Meteorology (BOM), Geoscience Australia, Emergency Management Australia and SOPAC.

55. Another initiative involves support to the Pacific Islands Fire Services Association (PIFSA) through an MOU with the Australasian Fire Authorities Council (AFAC). Under this arrangement SOPAC provides funding to support training and capacity building to PIFSA members. The delivery of training and capacity building programmes are provided by AFAC members in Australia and New Zealand. Support is also provided to PIFSA annually to facilitate an Executive Planning Meeting; this precedes the PIFSA Annual General Meeting which SOPAC also supports.

56. Other DRM partners involved in the strengthening of disaster management capacities include UNOCHA Pacific Office which coordinates inter-agency contingency-planning for humanitarian assistance in the region. UNOCHA is involved in the facilitation of an inter-agency

preparedness planning process at the regional level and national level. In general, UNOCHA supports the UN Resident Coordinator in providing coordination support for international humanitarian assistance in support of emergency affected populations and governments. The outcome will be strengthened coordination mechanisms in the Pacific at regional and national levels, improved preparedness measures, cluster coordination and agreed cluster leadership – a regional inter-agency contingency planning process for humanitarian assistance in the Pacific.

b. Core Indicator 2

Support the development and implementation of community-based disaster risk management programmes.

Level of Progress Achieved

57. Under the Australian-funded Pacific Enhanced Humanitarian Response regional DRM initiative, similar projects have started:

- **National Council of Churches of Australia (NCCA)** is working through the national council of churches to establish community DM committees and develop community DM plans for communities in Fiji, Solomon Islands, Tonga and Vanuatu.
- **CARE Australia** is working with NDMO in communities across the provinces of Toba, Sanma, Penama and Tafea in Vanuatu to identify traditional and modern coping mechanisms for reducing risk.
- **AUSTRICARE** is working with NDMO and four civil society organisations in the Solomon Islands to improve the resilience of communities while at the same time focusing on the protection of women and children.
- **Caritas Australia** is working with NDMO and its Pacific partners in Fiji, Kiribati, Samoa and Vanuatu to develop DRM plans and to clearly define the role of the Catholic Church in national DRM arrangements.
- **Australian Red Cross** is designing a regional project to work with national societies in twelve PICs to implement DRR activities and strengthen their capacity to respond to national disasters.
- **UNICEF** is working with NDMO and key partners in Fiji, Kiribati, Samoa, Solomon Islands and Vanuatu to establish a system of pre-positioned emergency supplies and review national DRM arrangements with a focus on incorporating the rights of children and women during disasters.

c. Core Indicator 3

Develop guidelines, including model of best practice, for effective disaster management and provide them to all Pacific island nations and communities.

Level of Progress Achieved

58. The TAF/OFDA training programme provides a model of best practice through its training courses. In addition, the UN Office for the Coordination of Humanitarian Affairs has introduced a humanitarian cluster approach whereby all UN and partner agencies have agreed to collaborate more effectively to provide support to Pacific countries in terms of preparedness for, and response to, major disasters. This approach which was launched in 2008 effectively provides the Pacific with the latest tools and practices to improve disaster management.

d. Core Indicator 4

Support the development and/or strengthening of appropriate regional mechanisms in conjunction with key stakeholders, to respond to humanitarian needs at the request of the Pacific Island Nations.

Level of Progress Achieved

59. A Pacific Humanitarian Assistance Framework was formed as a direct result of the international humanitarian committee's efforts (Inter-Agency Standing Committee) to improve the effectiveness of humanitarian response by ensuring there is greater predictability, accountability and partnership. The Regional Framework was formulated following the Solomon Islands tsunami on 01st April 2007 'which highlighted the challenges and importance in preparedness to launch an effective and predictable, humanitarian relief operation in PICs following a significant disaster'. As such an inter-agency planning workshop was convened in 2007 with the following objectives where the first two objectives were met fully and the latter two were partially met:

- A Pacific Disaster Response Framework.
- Priority areas/clusters for inter-agency disaster preparedness planning.
- Lead agencies for these priority areas/clusters.
- Roll out strategies for regional cluster and country level inter-agency contingency planning.

60. The cluster approach was identified in six sectors, deemed to be priority given the unique context of the Pacific: a) Health and Nutrition; b) Water, Sanitation and Hygiene (WASH), c) Emergency Shelter and Camp Management, d) Logistics, e) Information Management and f) Protection. The clusters also identified the lead agency and partners for each. The "Pacific Humanitarian Team" (all disaster response actors in the region) is an integral part of the PDRMPN. The success of this approach was evident in the floods of Fiji and the Solomon Islands in January 2009, where assessments were based on the cluster approach. This resulted in a thorough assessment of the affected areas and related humanitarian response.

61. Under the Australian-funded Pacific Enhanced Humanitarian Response regional DRM initiative, UNICEF has established a regional hub for pre-positioned emergency supplies. The regional hub services Fiji, Kiribati, Samoa, Solomon Islands and Vanuatu.

e. Core Indicator 5

Assist countries in the development of their emergency communications systems

Level of Progress Achieved

62. Under the B-Envelope Project of the EU EDF 9 funding, multi-country disaster risk reduction project, the construction of Emergency Operations Centres (EOC) and the installation of emergency communications systems is to be implemented. To date, country visits have been undertaken in Papua New Guinea, Solomon Islands, Palau and the Federated States of Micronesia and/or the construction of their EOCs underway.

63. In terms of strengthening emergency communications, satellite phones have been distributed to all member countries which have been useful in the NDMO's managing of their disasters, particularly when deployed to remote areas of the country concerned.

3. PROGRESS OF DISASTER RISK MANAGEMENT IN PACIFIC ISLAND COUNTRIES

3.1 Priority for Action 1

Ensure that disaster risk reduction is a national priority with a strong institutional basis for implementation

Regional Framework Theme 1

Governance – Organisational, Institutional, Policy and Decision Making Frameworks

a. Core Indicator 1

Integrate the management of economic, social and environmental risks into national planning and budgetary processes.

Level of Progress Achieved

64. This indicator has been successful in a few of the Pacific Island Countries to date, particularly those countries with DRM NAPs developed and are currently being implemented. These countries are: **Vanuatu, Republic of the Marshall Islands** and the **Cook Islands**.

65. The overall goal of **Vanuatu's** DRM NAP is to promote and ensure a safe, secure and resilient Vanuatu through the reduction of social, economic and environmental impacts of disaster on its people and their economy. Completed in 2006, it outlines key national activities under its eight implementation strategies for the eight thematic areas on which the NAP is structured. The NAP reflects a whole-of-country and all-hazards approach and outlines the relevant responsibilities of the different sectors and agencies to undertake for the different disaster risk reduction and disaster management activities outlined in the NAP. Vanuatu's NAP is in its third year of implementation with its implementation results reported on in depth in the Vanuatu country report.

66. The **Republic of the Marshall Islands** NAP was completed in 2007, with an overall goal of a 'safe and resilient RMI'. The development of the NAP sits within the third segment of the three-tier Strategic Development Plan (SDP) of the RMI Government, where Master Plans (second tier) and subsequent action plans are to be formulated to fulfil the ten goals of achieving their Vision 2018, the first tier. Like the overarching RMI policy document, the NAP outlines nine goals and



outcomes to achieve the whole-of-government, all-hazards and integrated approach to disaster risk reduction and disaster management as committed to by RMI in international and regional forums. The RMI Draft National Disaster Risk Management Arrangements (DRMA) was developed in line with the formulation of the NAP. The DRMA proposes the functions of the DRMA to reflect the new approach to Disaster Risk Management.

67. The **Cook Islands** NAP was developed through the country engagement of the PDRMPN and the SOPAC High Level Advocacy Team (HLAT) in Sept/Oct 2008. The Cook Islands NAP was approved by the Cook Islands Government in November 2008.

68. The **Samoa** NAP is being pursued through a two-stage process, the first being the implementation of strategic elements of the 2006 National Disaster Management Plan to enhance the full realisation of roles and responsibilities assigned to agencies and to community groups under the NDMP. The second stage is the development of the NAP of which a situation analysis has been completed to determine the existing gaps for DRR and DM across the sectors.

69. The Solomon Islands NAP began this year with a HLAT visit to the Solomon Islands where there was official request by the Solomon Islands Government for the development of their NAP. Their NAP is scheduled for completion in 2009.

b. Core Indicator 2

Include disaster risk assessment in development and investment decision-making right down to the community level.

Level of Progress Achieved

70. Vanuatu: Theme III of DRM NAP specifically outlines the key actions for the mainstreaming of disaster risk reduction right down to community level. In Key Action 3.6, communities and business sectors are encouraged to develop their own mechanisms to reduce disaster risks and to incorporate DRR programmes and activities into their area development programme that address community development and coping mechanisms in times of disaster (Key Action 3.9). In addition, capacity to be able to include disaster risk assessment in development and decision making right down to community level is also addressed under Theme 6 of the National Action Plan.

71. Republic of the Marshall Islands: Inclusion of disaster risk assessment in development and investment decision making is addressed in Goal 2 of the RMI NAP and Goal 8; the first objective of Goal 2 being to build the capacity for mainstreaming DRM for planners and decision makers at both national and local government levels. This objective is also reinforced in Goal 8 where the expansion of the knowledge base of decision makers is to be broadened and the private sector encouraged to engage in risk-sensitive practices.

72. Cook Islands: Goal 1 and Strategic Target 2 of the Cook Islands NAP stipulates that sectoral policy and plans include 'economic, social and environmental disaster risk assessments' as a key strategy for good governance and for mainstreaming disaster risk management at all levels.

73. Samoa: Under their National Disaster Management Plan 2006 – 2009, mitigation activities by statutory and non-statutory bodies are encouraged as part of their best practice risk management programmes, particularly for construction and maintenance on public assets. In addition, the Disaster Advisory Committee is also stipulated to do so and to advise the National Disaster Council on issues relating to risk reduction as required.

c. Core Indicator 3

Identify, assess and implement regulatory and incentive-based instruments for disaster risk reduction and disaster management, including financial risk sharing and insurance related strategies.

Level of Progress Achieved

74. The WB is undertaking a study through its Pacific Risk Financing Initiative to determine catastrophic risk financing options that can be implemented by Pacific countries. The study is being conducted in two phases. The first has involved the following countries **Cooks Islands, Fiji, Papua New Guinea, Samoa, Solomon Islands** and **Tonga**; where country-specific risk models were developed. The models will be used to develop country-specific loss risk profiles and to assess the feasibility of catastrophe risk financing and insurance options. The second phase will be with the other Pacific countries not part of the first phase.

d. Core Indicator 4

Strengthen whole of government and stakeholder collaboration in disaster risk reduction and disaster management, identifying lead agencies, roles and responsibilities.

Level of Progress Achieved

75. The national action plans and the new disaster risk management arrangements incorporate the thematic areas outlined in the Regional Framework for Action 2005 – 2015. The underlying emphasis of the Regional Framework is for a whole of government and strengthened stakeholder collaboration in Disaster Risk Reduction and Disaster Management. Countries with NAPs which have provisions for such are: **Cook Islands, Republic of the Marshall Islands, Vanuatu**; with the countries of **Samoa, Solomon Islands** and **Papua New Guinea** to follow suit. This indicator is also encompassed in the new disaster risk arrangements of the countries of **Fiji, Niue** and **Palau**; and captured in **Samoa's National Disaster Management Plan 2006 – 2009**, the review of the **Solomon Islands National Disaster Council and Act** and the **Tonga National Emergency Plan 2007**.

e. Core Indicator 5

Coordinate and harmonise development partner assistance to ensure effective use of resources

76. Rabaul Volcanological Observatory Twinning Programme for improved early warning capacity, improved community awareness of, and reduced vulnerability to, volcanic disasters. This is a twinning programme with Geoscience Australia funded by the Australian Government through AusAID. The programme is to support the strengthening of Papua New Guinea's capacity for monitoring and early warning of destructive volcanic events. The programme includes technical, equipment maintenance support and staff exchanges. This sort of twinning arrangement has been successful with the fire services in the Pacific. Essentially, the Pacific fire services were set up with a twinning partner from Australia where the effective use of resources for fire services was exchanged.

3.2 Priority for Action 2

Identify, assess and monitor disaster risks and enhance early warning systems

Relevant Theme of the Regional Framework

Theme 3: Analysis and Evaluation of Hazards, Vulnerabilities and Elements at Risk

Theme 5: Effective, Integrated and People-Focussed Early Warning Systems

Theme 3: Analysis and Evaluation of Hazards, Vulnerabilities and Elements at Risk

a. Core Indicator 1

Adopt and apply the Comprehensive Hazard and Risk Management (CHARM) process to assist decision making in disaster risk reduction and disaster management planning.

Level of Achievement

77. A key activity of the SOPAC Secretariat has been to assist their member countries in the review of their disaster risk management arrangements. Within most of the new disaster risk management arrangements of these countries, CHARM has been advocated / suggested to be the tool that assists in disaster risk reduction and disaster management planning. These countries are: **Vanuatu, Republic of the Marshall Islands, Samoa, Nauru** and **Fiji**. To date the countries for which new disaster risk management arrangements have been approved by respective governments are Vanuatu, Republic of the Marshall Islands, Samoa and Nauru. The Fiji Government's arrangements are still in draft stages despite the review being completed in 2006. The CHARM process has also been advocated in the Tonga National Emergency Plan 2007 and CHARM training programmes have also been developed and implemented by the National Disaster Centre of Papua New Guinea.

78. In the **Cook Islands, Palau, Tonga** and **Vanuatu**, SOPAC through its Community Lifelines Programme has been developing drinking water safety plans under the Water Safety Plans (WSP) project. Originally a 2-year project (2005-07), the project is currently in its second phase (2008-09) covering the same countries and incorporating an additional four countries: **Fiji, Niue, Marshall Islands** and **Samoa**. The project aims to develop a national drinking water safety plan using the CHARM process. Phase 1 involved developing WSPs for the first four countries. Phase 2 involved refining the WSPs for the first four countries and facilitating a mentoring relationship between the first four countries and the second group of countries.

b. Core Indicator 2

Conduct hazard and vulnerability assessments and mapping at all levels, which will include the collection of required baseline data.

Level of Achievement

79. In this reporting period, Geo-data management training has been conducted for the following Pacific Island Countries; Cook Islands, FSM and Palau. Prior to the training for FSM, baseline data collection was acquired on hazards and vulnerabilities to assist with the Geo-data management training.

c. Core Indicator 3

Promote and apply community-based disaster risk assessment tools and best practices.

Level of Achievement

80. An initiative of the Pacific Red Cross Movement are their Community Pilot Projects whereby the intention is the increase in community awareness of DP/DRR and local vulnerabilities and capacities and to increase community capacity to identify projects to address vulnerabilities and mobilise resources. These projects are also intended to develop best practices in DRR at the community level.

81. The FSPI is also involved in community-based disaster risk assessments. In Tuvalu and Samoa, they are working within the community to develop community-based disaster risk reduction and disaster risk management plans / safer village plans. The projects are focused on increasing community resilience to natural disasters through the use of traditional coping strategies.

d. Core Indicator 4

Collect and analyse comprehensive data on the direct and indirect impacts of disasters on development in both the short and long term.

Level of Achievement

82. The initial study on the impact of disasters on development was conducted in 2005. This study highlighted the gaps that exist with those SOPAC member countries which were understudied in terms of data collection and storage. However the study has also highlighted the need to continue to collect and analyse data on the direct and indirect impacts of disasters on certain aspects of development, such as through a particular community or on a particular catchment. Since, two comprehensive studies were completed in this period: the cost-benefit analysis of having a flood early warning system for the Navua Catchment in Fiji and the Economic assessment of flood management options for the lower Vaisigano catchment, Apia, Samoa.

83. Similar projects are being conducted in:

- communities in **Fiji, Solomon Islands, Tonga** and **Vanuatu** where the National Council of Churches of Australia (NCCA) is working through the national council of churches to establish community DM committees and develop community DM plans.
- communities across the provinces of Toba, Sanma, Penama and Tafea in **Vanuatu** where CARE Australia is working with NDMO to identify traditional and modern coping mechanisms for reducing risk.
- **Solomon Islands** where AUSTCARE is working with NDMO and four civil society organisations to improve the resilience of communities while at the same time focusing on the protection of women and children.
- **Fiji, Kiribati, Samoa** and **Vanuatu** where Caritas Australia is working with NDMO and its Pacific partners to develop DRM plans and clearly define the role of the Catholic church in national DRM arrangements.

e. Core Indicator 5

Develop strategies to increase the engagement of communities and incorporate traditional knowledge in disaster risk reduction and disaster management process.

Level of Achievement

84. The use of traditional coping mechanisms to increase the resilience of communities on the weather coast of the Guadalcanal in the **Solomon Islands** and traditional disaster risk reduction measures for Pacific Communities is a current project of the FSPI. In addition, the **Vanuatu** NDMO has begun to document the use of traditional knowledge in disaster management as outlined in their NAP.

85. Other communities in which traditional knowledge are being incorporated into the disaster risk management process are in Tuvalu and Samoa where the FSPI's project involves the strengthening of homes using traditional knowledge, on people-focussed early warning systems, land use practices, food preservation techniques and water use practices in dry areas.

86. In **Fiji, Solomon Islands, Tonga** and **Vanuatu**, NCCA, CARE Australia and AUSTCARE are using traditional knowledge in their respective projects to help communities build resilience to disasters by reducing risk.

Theme 5: Effective, Integrated and People-Focussed early Warning Systems

a. Core indicator 1

Establish and/or strengthen institutional capacities to ensure early warning systems are integrated into governmental policies, decision-making processes and emergency management systems at both national and community level.

Level of Progress

87. Following the installation of the flood early warning system of Navua, **Fiji**, a flood response plan was developed and a table top exercise conducted. The Red Cross also conducted a Vulnerability and Capacity Assessment (VCA) in Navua. These activities also informed the series of awareness materials on preparedness and response for the Navua Community as well as the erection of Billboards on preparedness and response in the Navua area. In addition, a memorandum of understanding has been entered into with the Fiji Government for the continuation of support to the Hydrology Unit of the Fiji Government, the department responsible for the maintenance of the flood early warning systems for Fiji. The forecasting and distribution of the communication mechanism for flood early warnings were applied in the development of the flood response plan for the Navua area which has also been considered in national disaster management planning. In addition, the UNDP PC has also conducted a number of VCA studies with Navua communities to help inform its development programme for Fiji, while the Fiji Red Cross is currently conducting VCA in **communities around Fiji** through its different branches to inform its disaster risk reduction programme.

b. Core Indicator 2

Complete inventories and needs analyses of national early warning systems with inputs from all stakeholders to ensure that traditional knowledge and community needs are addressed.

Level of Progress

88. As part of their multi-stage project on tsunami hazard and risk assessment for the South West Pacific, Geoscience Australia (GA) and SOPAC have conducted detailed inventories of geospatial data in the countries of **Tuvalu, Fiji, Solomon Islands, Kiribati, Niue** and **Tonga** as well as provide options for tsunami inundation and risk modelling. While there has been sufficient work in data collection being previously done, this is insufficient by way of high-resolution coastal and inter-tidal topography data available in the region that is suitable for inundation and sea-level change modelling and monitoring.

89. In terms of the incorporation of traditional knowledge into early warning systems, FSPI is undertaking a community-based project on Guadalcanal in the Solomon Islands for people-focussed early warning system and the development of community / village safety plans.

c. Core Indicator 3

Upgrade or redesign existing national forecasting or early warning systems to cater for major hazards.

Level of Progress

90. Under the review of the Early Warning Forecasting for weather, the Fiji Meteorological Services was provided support in terms of forecasting as well as an upgrade to the forecasting services provided to the national meteorological services (NMS) of Fiji, Vanuatu and Tonga.

d. Core Indicator 4

Develop and implement a comprehensive programme for community awareness and preparedness.

Level of Progress

91. The IFRC and national Red Cross Societies regularly undertake training and capacity building initiatives at community level to enhance preparedness and response capabilities. This was supported in 2008 by AusAID through dedicated funding to a Pacific Community Integrated Disaster Risk Reduction Project which also seeks to ensure increased resilience of community groups in four countries: **Fiji, Tonga, Solomon Islands** and **Vanuatu**.

3.3 Priority for Action 3

Use knowledge, innovation and education to build a culture of safety and resilience at all levels

Relevant Theme of the Regional Framework

Theme 2: Knowledge, Information, Public Awareness and Education

a. Core Indicator 1

Strengthen training programmes to enhance professional development in disaster risk reduction and disaster management amongst all stakeholders.

Level of Progress

92. Swinburne University of Technology (SUT) (Melbourne, Australia) Post Graduate Certificate in Disaster Management to develop and nurture skills in disaster risk management across PICs. Scholarships to the course are provided through the TAF/OFDA funding. The suite of six courses offered under the TAF/OFDA training programme has been recognised as a pre-requisite to the post-graduate certificate. Since the start of this arrangement in 2004, six Pacific Island nationals have participated in the course out of which one has successfully completed the programme.

b. Core Indicator 2

Expand and focus public awareness and education programmes to enhance community resilience through community-driven approaches, initiatives and information sharing.

Level of Progress

93. The Pacific Red Cross Community Awareness Programme and Communications and Advocacy involves (i) the development and implementation of community awareness programmes on disaster preparedness and disaster risk reduction including adaptation to climate change; (ii) substantially increasing knowledge and awareness amongst regional partners, national governments and communities of Red Cross operating principles; and (iii) work in disaster response, utilising available regional and national networks, media and international events.

94. The FSPI also is involved in community-driven approaches to public awareness and educational programmes aimed at increasing community resilience through community participatory planning. The programme is being implemented in four Pacific Island Countries; **Fiji, Tonga, Solomon Islands and Vanuatu.**

c. Core Indicator 3

Strengthen collaboration among government and non-government agencies to more effectively underpin information management, public awareness and education.

Level of Progress

95. The Pacific Disaster Net (www.pacificdisaster.net) – Virtual Centre of Excellence – for Disaster Risk Management in the Pacific Region is a product of the collaborative effort by UNDP, SOPAC, UNOCHA and IFRC. The web portal and database system is designed to be the largest and most comprehensive information resource for Disaster Risk Management for the Pacific. It was launched in September 2008 and is a living collection and growing DRM information resource for DRM actors and stakeholders to research and collaborate and improve Information and Knowledge Management. It also supports national action planning, decision making and provides in-country information for distribution within the region. PDN hosts material relating from various sources like countries, organisations and agencies at regional, national and international level, relating to: Governance, Risk Assessment, Early Warning and Monitoring, Disaster Risk Management, Training and Tools.

d. Core Indicator 4

Develop strategic and long-term approaches to the design, implementation and evaluation of public awareness and education programmes.

Level of Progress

96. PENTAG meets every second month to improve coordination of disaster management training programmes. Through this mechanism countries are able to receive optimum support in relation to their disaster management training needs. This mechanism also directly contributes to improved awareness and understanding of disaster risk.

e. Core Indicator 5

Develop resources for, and delivery of media-based public awareness and education programmes.

Level of Progress

97. Survival Island Kits were developed on the main hazards of the Pacific (Tropical Cyclones, Earthquakes, Volcanoes, River Floods, Tsunami and Landslides). These kits are board games for children and are an educational tool designed to take the issue of disasters to the classroom so students can relate to natural hazards in the Pacific and learn to tackle them. The kit consists of six different board games, one for each hazard with a 'Did You Know Facts' list. Each board game has experiments for each hazard. The experiments and board games are an interactive and fun way of helping students learn more about the hazard, its potential impacts and how to prepare for them. Kits have been sent to NDMOs to distribute incountry.

98. An offline version is also available on PDN and has been distributed to NDMOs in the region.

f. Core Indicator 6

Affirm, record and protect traditional coping mechanisms.

Level of Progress

99. There has been some work on the documenting of traditional coping mechanisms in Vanuatu and the Red Cross has been approached to support in its documentation, recording and affirming. There is also an ongoing programme in Vanuatu where cultural field workers work in collaboration with the Women's Cultural Programme on traditional:

- a) food security and processing;
- b) houses;
- c) early warning signs;
- d) language; and
- e) water/medicine.

In addition, a terms of reference for the transcription and synthesis of audio tapes from the Vanuatu Culture Centre (VCC) on Traditional Knowledge relating to DRM were developed and discussed with the NDMO, Meteorological Service and VCC.

g. Core Indicator 7

Integrate traditional knowledge into information management systems.

Level of Progress

100. The PDN (www.pacificdisaster.net) holds some information on traditional knowledge in terms of mitigation and preparedness in times of a natural disaster. While this is a relatively new area for incorporating into formal structures, traditional methods have always been utilised in mitigation, preparedness and recovery. A study conducted by Geological and Nuclear Science of New Zealand into traditional responses in Pacific Island Countries highlights this and can be accessed on PDN.

h. Core Indicator 8

Integrate disaster risk reduction and disaster management training where appropriate into formal education programmes.

Level of Progress

101. This is an avenue still being pursued through the University of the South Pacific, for formal training in disaster risk reduction and disaster management to be incorporated into their curriculum. While no progress has been made in this area, developments with the FSMed have seen the first workshop on Disaster and Emergency Health conducted in 2008. The course will now be offered through FSMed for the next 5 years.

i. Core Indicator 9

Strengthen national capacity for conducting comprehensive disaster impact assessments, and cost-benefit analysis of disaster risk reduction and disaster management measures

Level of Progress

102. A set of guidelines for estimating the economic impact of natural disaster on development in the Pacific was developed in 2005, jointly by USP and SOPAC. The guidelines were developed to address the constraint faced by Pacific Island Countries decision makers in conducting comprehensive, systematic and consistent assessments of natural disaster impacts on development. Accompanying these guidelines is a 'Toolkit for Assessing the Costs and Benefits of Disaster Risk Management Measures'. The guidelines were distributed to the National Disaster Management Offices of the region, and is still a relevant tool to utilise to conduct cost-benefit analysis of the impact of natural disasters. This methodology (cost-benefit analysis) was used to determine the economic benefits of having a flood early warning system to the Navua Community in Fiji (2008) and for flood management options (structural and non-structural measures) for the Vaisigano catchment in Apia, Samoa – an area that is subject to frequent flooding.

j. Core Indicator 10

Establish an integrated national information system for collection and management of comprehensive data and information, for disaster risk reduction and disaster management.

Level of Progress

103. Plans are in place to train nationals in the use of PDN (www.pacificdisaster.net) to retrieve and access comprehensive data and information for disaster risk reduction and disaster management in the region.

3.4: Priority for Action 4

Reduce the underlying risk factors

Relevant Theme of the Regional Framework

Theme 6: Reduction of Underlying Risk Factors

a. Core Indicator 1

Ensure the participation by all stakeholders: government agencies, private sector and communities in adopting and applying risk-reduction tools and the sharing of risk-reduction information

Level of Progress

104. The use and application of risk reduction tools was first advocated to CEOs of the Ministry of Finance and Planning and Disaster Management at their first meeting in July 2008. The meeting was essentially to demonstrate how critical it was to consider risk reduction information through the use of risk reduction tools in development planning and budgetary processes. This process is also outlined in the national action plans of the countries that have them.

b. Core Indicator 2

Support and enhance the capacity of social and planning systems to ensure vulnerable populations are less exposed to disaster risks and disaster impacts.

Level of Progress

105. In Samoa, this is supported and enhanced in the processes of developing and implementing disaster risk management programmes and activities.

c. Core Indicator 3

Promote risk-sensitive resource-use policies and practices and ensure compliance.

Level of Progress

106. Vanuatu – Ministry of Lands is developing a land use management policy to enable developers to conduct full risk assessment before development can be approved. CHARM, Comprehensive Hazard and Risk Management, is also being introduced for use in Vanuatu and likewise in Samoa.

d. Core Indicator 4

Implement appropriate building codes and monitor and report compliance by responsible national administrative bodies.

Level of Progress

107. Fiji already has a national building code in place. In the retrofit project with the Suva Vocational School, compliance was made with the National Building Code as well as with seismic standards of New Zealand.

108. Samoa already has a national building code in place; which is to be reviewed to take into account best seismic information available.

e. Core Indicator 5

Develop financial risk-sharing mechanisms, particularly insurance, re-insurance and other financial modalities against disasters.

Level of Progress

109. An insurance review has been conducted for Samoa.

f. Core Indicator 6

Promote food security as an important factor in ensuring the resilience of communities to disasters.

Level of Progress

110. Samoa – Implementation of pilot projects to trial measures designed to promote adaptation in the agriculture and food security sector. This will contribute to improved management of village plantations and commercial farms in line with climate-related risks. Instability within the agriculture sector will be reduced. MAF initiatives in collaboration with FAO (Food Security Project).

3.5 Priority for Action 5

Strengthen disaster preparedness for response

Relevant Theme of the Regional Framework

Theme 4: Planning for effective Preparedness, Response and Recovery

a. Core Indicator 1

Review and strengthen disaster management planning arrangements ensuring clearly-defined roles and responsibilities, and an integrated approach involving all stakeholders.

Level of Progress

111. Under the new disaster risk management arrangements, disaster management planning is one area that has been improved with clearly-defined roles and responsibilities for disaster management outlined within the arrangements, be it in draft form or as the approved plan for disaster risk management.

b. Core Indicator 2

Ensure that disaster management organisational structure includes an adequately resourced NDMO, functional EOC and other infrastructure.

Level of Progress

112. Under the EU-funded EDF 9 B Envelope Project, the aim is to build and strengthen national actions to reduce vulnerability to natural disasters and build resilience. The eight Pacific ACP States to benefit are: **Federated States of Micronesia (FSM), Republic of Marshall Islands (RMI), Nauru, Palau, Papua New Guinea (PNG), Solomon Islands, Tonga, and Tuvalu.** The purpose of the EU EDF 9 B envelope project is to develop and strengthen selected communities in either access to safe drinking water, or emergency operations/communications. The priorities are to be implemented in these two areas as follows: safe drinking water – **Tonga, Tuvalu, RMI, Nauru;** Emergency operations/communications – **PNG, Solomon Islands, Palau, and FSM.** Country missions were conducted in August 2008 to **RMI, FSM and Palau** as well as **Tonga.** In September, missions were undertaken to the **Solomon Islands and PNG.** The purpose of the missions were to establish functional emergency communications systems and emergency operations centres (EOC), a physical location where communities come together during an emergency to coordinate response and recovery actions and resources and optimise communication and coordination.

c. Core Indicator 3

Develop and implement a disaster management training programme including community-based disaster risk management.

Level of Progress

113. AusAID in 2008 funded a Pacific Community-based Integrated Disaster Risk Reduction project aimed at strengthening community capacity in DRR in Fiji, Solomon Islands, Tonga and Vanuatu.

114. In **Fiji, Solomon Islands, Tonga and Vanuatu,** NCCA has designed a community-based DRM training course and a field manual for use by field project officers and community DM committees.

115. Community Based Disaster Risk Management (CBDRM) training is also provided by the FSPI. The UNDP also has plans to support community-level DRM projects in the Marshall Islands, Vanuatu and Fiji.

116. WHO also has an Emergency & Humanitarian Action (EHA) programme. The outputs include: 1) Public health sector disaster management training (PHEMAP) courses (Fiji, Vanuatu, Tonga and Solomon Islands in 2008); 2) Pacific Health Sector Emergency Response Manual (draft status in 2008); 3) Health Cluster Tool Kit 2008; and 4) technical support to health sector in disasters.

d. Core Indicator 4

Determine, establish and maintain effective and sustainable emergency communications systems.

Level of Progress

117. This has been reported under Core Indicator 2

e. Core Indicator 5

Strengthen emergency preparedness and response agencies

Level of Progress

118. A UNICEF programme on Strengthening Humanitarian Emergency Response Management for Children and Women in the Pacific exists. The outcome of this programme is for National partners in programme countries to be better prepared and better able to help protect the basic rights of children and women and to ensure that their essential needs are met, effectively, dependably and in a timely manner in times of disaster, thereby reducing the impact of disasters when they occur. Output 1) The prepositioning, management and distribution of humanitarian response supplies (especially health) for children and women will be strengthened. Output 2) National and sub-national capacity in emergency management planning, disaster assessment and response monitoring for children and women will be enhanced.

119. **Fiji, Kiribati, Samoa, Solomon Islands** and **Vanuatu**, under the UNICEF programme on Strengthening Humanitarian Emergency Response Management for Children and Women in the Pacific, a national system for pre-positioned emergency supplies is being established.

f. Core Indicator 6

Establish a national disaster fund for response and recovery.

Level of Progress

120. Fiji, Samoa and Tonga and most recently for Vanuatu have established this within their national budgets.

g. Core Indicator 7

Establish contingency stockpile of emergency relief items.

Level of Progress

121. Red Cross Container Programme – Maintaining and stocking National Society containers and supporting NS logistics systems across the Pacific to ensure preparedness to respond to disaster. The aim is to develop the response capacity of national societies to enable them to respond to small-scale disasters. The programme includes the development of systems for monitoring stock movement as well as restocking pre-positioned relief items.

h. Core Indicator 8

Adapt regional guidelines and models of best practice for national implementation.

Level of Progress

122. One of the objectives of SOPAC's Community Risk Programme is to distribute disaster management planning guidelines to all SOPAC member countries. This is a work in progress.

4. CHALLENGES AND FUTURE OUTLOOK

4.1 Challenges

123. It is quite clear in the compilation of this report that most progress of the implementation of the Regional Framework within PICs has been possible with the assistance and/or the leadership of disaster risk reduction and disaster management development partners. In instances where implementation is quite successful in country, this is largely through the collaboration of the different government agencies of the implementing countries and or through strong partnership with community organisations or civil society organisations. However in the compilation of this report, one of the major challenges was in the obtaining of information and data from the National Disaster Managers Officers throughout the region. This however is not a reflection that there has not been any implementation in country, as from the experiences of in-country work of the PDRMPN that such work in disaster risk reduction and disaster management does exist. These challenges could be attributed to the following:

- The lack of personnel to be delegated this reporting responsibility from the Directors of the National Disaster Management Offices.
- That the area of monitoring and evaluation is still relatively new to the region and it is therefore crucial to highlight in country why such a mechanism is not so much a policing mechanism but rather an effective measure of identifying how much one has progressed in achieving specific targets in the implementation of the Regional Framework. As such monitoring and evaluation is a system where one can better their overall performance towards the specific goals of the Hyogo Framework and the key national activities of the Regional Framework.
- Insufficient capacity within the national authorities or the non-existence of a national platform for the effective relaying and sharing of information across the sectors and for such an activity to be documented.
- The need for the lead or the implementation agency of the National Action Plans to take responsibility for the monitoring and evaluation component of the NAP.

124. Other challenges that emerged from the review of progress against the implementation of the six thematic areas of the Regional Framework have been summarised as follows:

- There is an emerging need for technical support to be resident in-country to lead in the implementing of the changes from the conventional approach of disaster management to the current emphasis of disaster risk management (disaster risk reduction and disaster management).
- Community participation and practices in disaster risk reduction and disaster management does exist but scattered amongst the different villages of some of the Pacific Island Countries



where disaster risk management is being implemented right down to community level. As such there is a need for community engagement to be coherent and strengthened and the base of partners for such to be broadened.

- To strengthen end-to-end Early Warning Systems for all hazards.
- Continued partner collaboration at regional and international level.
- The need to strengthen capacities at national level (NDMO, Meteorological Services, Hydrology Services) on their key issues and area of need.
- The need for robust governance and institutional arrangements for disaster risk management.
- For finance and planning arrangements of the region to be revised to incorporate disaster risk reduction / climate change adaptation and disaster management.
- Strengthen baseline data, particularly on the socio-economic impact of disasters to assist in focussed policies and programmes that address the needs of the most vulnerable groups (children, women and the elderly) which will also enhance humanitarian responses.
- A more proactive integration of disaster risk reduction / climate change adaptation within the educational system, from primary level through to tertiary institutions.
- Improved access and understanding of the use of scientific tools (e.g. GIS & remote sensing and modelling) to inform hazards, vulnerability and risk assessments.
- Specific skills development to enhance preparedness for disasters.
- Improve national access to funding for Disaster Risk Management through advocacy, technical support and dedicated resources.

4.2 Future Outlook

125. The year 2009 has seen the establishment of the Pacific Platform for Disaster Risk Management, with the objective of:

- Supporting the implementation of the Hyogo Framework for Action and the Pacific DRR and DM Framework for Action 2005-2015.
- Promoting regional cooperation; strengthening further coordination mechanisms, understanding, commitment and approaches for disaster risk reduction and disaster management in the Pacific.
- Reviewing progress of implementation of disaster risk reduction and disaster management in the Pacific and report to the Global Platform for DRR.
- Determine and prepare for the participation of Pacific states and other key stakeholders at the meetings of the Global Platform for DRR, a bi-annual event.

126. This should provide the basis to further enhance national capacity to identify areas where gaps still exist in the implementation of the two frameworks. The availability of reporting tools is meant to enhance the capacity of countries to be able to easily identify gaps that still exist. On the other hand, such tools would also enable development partners to collaborate effectively, avoid duplication and to disperse resources where most needed to reduce disaster risks.

127. On the other hand, some activities will still be the focus of DRM partners as work towards achieving full implementation of the Regional Framework continues.

- Continue to promote a paradigm shift from treating disaster as an environmental and humanitarian issue to treating disaster risk management as a sustainable development issue, which requires a balanced approach to addressing social, economic and environmental goals and objectives.
- Disaster risk management fundamentally involves supporting communities in understanding and managing their hazards and disasters.
- Effective disaster risk management requires a strong governance framework with clear policies

and legislation, accountability issues of institutional and organisational arrangements and connections across, within and between levels of government, sectors and communities. As such the development and implementation of the rest of the PIC's National Action Plans on DRR and DM will continue to be driven by the PDRMPN.

- The mainstreaming of disaster risk management and capacity development into national planning and budgetary processes, sectoral and provincial plans and community development plans; and the efficient use of available tools to support decision making.
- Developing time-series hazard information and undertaking robust vulnerability assessments supported by traditional knowledge, as a basis for underpinning key decisions at all levels in a country (i.e. national government (whole-of-government and sectoral) and provincial government agencies, NGOs, communities and individuals).
- Encouraging the relevance and value of traditional knowledge and its integration with scientific information in the design of risk reduction and risk management strategies and activities at all levels.
- Adoption of regulatory and incentive-based disaster risk management instruments.
- Acknowledge the importance and relevance of continued assistance by regional organisations as well as regional and international development partners in supporting national activities.
- Enhancement of national capacity in the area of reporting, monitoring and evaluation of disaster risk management in PICs.

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