Pacific Damage and Loss (PDaLo)

Our Mission

The mission of the SPC is "to help Pacific island people position themselves to respond effectively to the challenges they face and make informed decisions about their future and the future they wish to leave for the generations that follow.

Our Goal

The goal of the Applied Geoscience and Technology Division is to apply geoscience and technology to realise new opportunities for improving the livelihoods of Pacific communities.

Pacific Damage and Loss (PDaLo)

WORKSHOP REPORT

Suva, Fiji, 28 – 29 October 2013

Megan Streeter

Important Notice

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Acronyms and Abbreviations

CC	Climate Change
DAC	Disaster Advisory Committee
DaLA	(post disaster) Damage and Loss Assessment
DesInventar	Methodology for Damage and Loss used for PDaLo Database
DIMS	Disaster Information Management System
DMO	Disaster Management Office
DRM	Disaster Risk Management
DRP	Disaster Reduction Programme
DRR	Disaster Risk Reduction
DSA	Detailed Sectoral Assessment
EMCI	Emergency Management Cook Islands
GIS	Geographical Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HFA	Hyogo Framework for Action 2005
IDA	Initial Damage Assessment
IFRC	International Federation of Red Cross and Red Crescent Societies
IKM	Information and Knowledge Management
IKM4DRR	Information and Knowledge Management for Disaster Risk Reduction
IMS	Information Management System
ISO	International Organization of Standardization
MoF	Ministry of Finance
MoU	Memorandum of Understanding
NDMO	National Disaster Management Office
NEOC	National Emergency Operations Centre
PacRIS	Pacific Risk Information System
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PDaLo	Pacific Damage and Loss
PDN	Pacific Disaster Net
PDNA	Post Disaster Needs Assessment
PIC	Pacific Island Country
PICTs	Pacific Island Countries and Territories
PIFS	Pacific Islands Forum Secretariat
PIFACC	Pacific Islands Framework for Action on Climate Change
Sitrep	Situation Report
RFA	Pacific Regional DRM Framework for Action
RR	Risk Reduction
SMS	Short Message Service
SOPAC	SPC's Applied Geosciences and Technology Division
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
SRDP	Strategy for Climate and Disaster Resilient Development in the Pacific
ToR	Terms of Reference
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations Office for Disaster Risk Reduction
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNSP	United Nations Studies Program

1. EXECUTIVE SUMMARY

The Secretariat of the Pacific Community's (SPC) Disaster Reduction Programme (DRP) of the Applied Geoscience and Technology (SOPAC) Division, in conjunction with the United Nations Office for Disaster Risk Reduction (UNISDR), organised a workshop on disaster damage and loss, which was held in Suva, Fiji, on 28 and 29 October 2013. The workshop was attended by 13 participants representing Cook Islands, Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu. Also in attendance were representatives of Suva-based partner organisations, the International Federation of Red Cross and Red Crescent Societies, United Nations Development Programme (UNDP) and UN Office for the Coordination of Humanitarian Affairs.

The intensive two-day workshop was designed to consider opportunities to access and develop damage and loss data to support disaster risk management (DRM) in the region and to develop a way forward. Participants were made aware of the existence of different information systems that serve DRM in the Pacific and the increasing need for quality-consistent information to underpin planning.

Recognising the importance of information management for decision-making, participants shared their experiences and challenges with damage and loss data and information. They learned lessons from each other and identified gaps, needs and activities that could be implemented to improve disaster information management at the national and regional levels over a six-month, one-year and two-year time period.

Outcomes focussed on prioritising the type of information (minimum parameters) that could enhance country risk profiles for DRM and which could be used as a template in the Pacific Damage and Loss (PDaLo) database. Based on these discussions, participants also identified data gaps from each of their own countries with the intention of collaborating more intensely with other local government agencies to share useful information more freely.

Recommendations were made to review data quality, define language, create standard templates and strengthen DRM institutions, particularly in the information management area. Other recommendations were to expand coordination and collaboration with local government agencies, develop and retain skilled capacity to manage and maintain information and knowledge, update plans, regulations and strategies and to continue training programmes to address data and information management needs, as well as to create a common interface to access the multiple DRM databases available for the Pacific region.

The workshop was deemed a success by participants and SPC was requested to conduct further such workshops at the national level to create a common understanding among agencies on collaboration and coordination with regard to information management and the need to get complete and accurate data for DRM.

2. INTRODUCTION

In line with the rest of the world, the Pacific region is experiencing an increasing demand for information on disasters. This interest is partly driven by the desire to better understand the impacts of past events so that we can better prepare for future ones. This need for information is bolstered with the impending impacts of climate change in the region.

Providing useful information on disasters means ensuring that data is consistently collected, described and updated, as well as made available to the wide range of stakeholders who need it to inform risk reduction.

In the Pacific region, consolidated information on disaster risk management has been achieved through the Pacific Disaster Net (PDN). This portal has sought to underpin informed decision-making and effective investments into disaster risk reduction. Nevertheless, numerous other information systems highly pertinent to disaster risk management in the region also exist or are under development. These include the Pacific Risk Information System (PacRIS) and the emergent Pacific Damage and Loss (PDaLo) Database, both of which include data that describe the cost of disasters in the region.

Information systems with Damage and Loss details in the Pacific Region

Pacific Damage and Loss Database (PDaLo) - www.pdalo.net

Pacific Risk Information System (PacRIS) - http://pcrafi.spc.int

Pacific Disaster Net (PDN) - www.pacificdisaster.net

In order to optimise disaster risk management in the Pacific, there is a need for stakeholders to be aware of the existing and emerging opportunities to share and use data in the region, how best to make use of these opportunities and to develop and implement a strategy for development in the future.

3. PURPOSE

In light of the existing various information systems that serve DRM in the Pacific and the increasing need for consistent quality information, this workshop considered opportunities to access and develop damage and loss data to underpin DRM in the region, as well as a way forward.

The objectives of the workshop were to:

a) Clarify information flow and needs before, during and after disaster events, including the requisite data, systems, roles and communication;

b) Introduce the Pacific Damage and Loss Database (PDaLo) and provide the rationale for investing in a disaster loss database;

c) Clarify links between PDaLo, post disaster needs assessment (PDNA), disaster damage and loss assessment (DaLA), Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) and PDN; and

d) Identify a way forward for systematic collection of loss and damage data in the Pacific region.

Expected outcomes of the workshop were to strengthen the evidence base for DRM in the region and improve the ability of key agencies to manage information underpinning disaster risk management via:

(i) Improved ability to plan and design information management for DRM;

(ii) Identification of a way forward to systematically collect damage and loss data in the Pacific region;

(iii) Introduction of Pacific Damage and Loss Database with links to other systems better understood;

(iv) Improved awareness and usage by practitioners of existing databases for DRM in the region; and

(v) Strengthened sustainable development with evidence and knowledge through information management.

The workshop, organised by SOPAC's DRP with funding assistance from UNISDR, was held in Suva, Fiji, on 28 and 29 October 2013. It was attended by 13 participants, representing Cook Islands, Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu. Also in attendance were eight representatives of partner organisations — UNISDR, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), UNDP, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and the International Federation of Red Cross and Red Crescent Societies (IFRC).

A full list of participants is attached as Annex 2.

4. OFFICIAL OPENING

The event started off with a prayer by Patrick Arioka, CEO Emergency Management Cook Islands. This was followed by the welcome speech from Mosese Sikivou, the head of SPC's Disaster Reduction Programme. In providing context for the workshop, Mosese mentioned the joint activities that SPC's SOPAC PDN is working on with partner organisations like UNISDR and UNOCHA and the inherent benefits to the region. The importance of accessibility to accurate information during disasters and emergency situations was stressed with the need for skilled capacity to manage and maintain data and information systems. UNISDR provides funding and technical assistance that supports SPC and the region to address a range of issues on disaster damage and loss as well as anchors the Pacific presence on the Global Platform for Disaster Risk Reduction.

The opening address was delivered by Tim Wilcox, Sub-regional Coordinator (Pacific) of UNISDR who started off with a quote: *'You don't know what you don't know'*, meaning that unless you actually try to find out things, you will not know what is out there. He stressed that data is especially critical for the Pacific because of the inherent tight resources in Pacific island countries (PICs), noting that an example of negative economic impacts caused by limitations in data is when insurance companies do not insure tourism venture infrastructure due to a lack of modelling that leads to their inability to identify particular risks of flood prone areas. The example highlighted the importance of data in the Pacific and the need for it to be used effectively. Data enables responders and planners to identify where to invest and where to focus emergency services.

Tim also quoted Charles Babbage: *'Errors using inadequate data are much less than those using no data at all'*, meaning that even if you may only have a small amount of data to inform your decisions, this is better than any decision made with no data at all. The evolution of more data being available for the region is a vital improvement in disaster mitigation. Annual disaster event data collected should be recorded and used as these are the little regular occurrences that can create a better picture for planners and responders. The PDaLo information system which uses the DesInventar methodology (Disaster Information System) is one such system of collected data that can inform decision-making when shared and used appropriately. UNISDR will explore how to continue supporting SPC and the region in disaster risk management data and information systems.

One chunk of data was equated to a dollar coin, suggesting that the more data one had the more money one had. As most would agree that it is good to have more money in the bank, information managers agreed that it was best to have more data because they could do more with it. PDaLo collects all kinds of data and cross references it consistently and UNISDR hopes this will be rolled out to all countries in the Pacific.

Participants were urged to promote the idea that data had an expiration date and was only useful when shared. For example, if building close to a beach, it would be unsafe to use beachfront data from the previous 60 years as changes could have occurred to the coastline. It would be more prudent to use recently collected data, which is why it is important to share data. Considering the costs of collecting data and managing and maintaining databases, it is more useful to share the data among stakeholders who have an interest in using validated data. SPC was thanked for being a stalwart in the region for collecting, verifying and managing disaster damage and loss data for the region.

5. SESSION 1
IDENTIFICATION OF DAMAGE AND LOSS DATA EXPERIENCE WITH PARTICIPANTS

Following the welcome speech and opening address, Jutta May introduced Ken Granger's 1999 report (which can be accessed for download at http://www.pacificdisaster.net/pdnadmin/data/original/AGSO_1999_An_information_infrastructure.pdf) on An information infrastructure for disaster management in Pacific Island countries which was published by the Australian Geological Survey Organisation (now Geoscience Australia) and reviewed in 2002 as an article published in the Australian Journal of Emergency Management. This led to a discussion on the changes in technology and attitudes on sharing information, as well as coordination among agencies and national ministries. Statements made in the report about information management are as true today as it was then. A distinction was made between information management versus information technology whereby the former is about content input, analysis, manipulation and extraction and the latter is about the systems, software and connectivity required to enable the databases to work on a larger national or regional scale.

The differentiations of data, information and knowledge were elaborated upon with the impact of not having an information manager within agencies, especially when compared to time spent on searching for relevant information without the presence of dedicated staff. The timeliness of information provided for decision-making before, during and after disasters was another factor.

Benefits of damage and loss information include disaster risk planning, responding, recovery, investing and even insurance. Patterns and trends from past events could assist with continuous improvement. The session then proceeded to the 'line up' exercise whereby participants split into groups of those who had a damage and loss system in place, those who had systems that did not work and others who had no such systems in place.

Samoa had damage assessment forms whereby collected information was checked by the Disaster Management Office (DMO) for accuracy before being shared. Bureau of Statistics also got involved with data collection and were working collaboratively with DMO to develop further information sharing mechanisms.

Solomon Islands had access to research[1] done by other parties with records up to 1990. But data was lost from then until recently when SOPAC assisted with database information through the PDaLo website. They are currently using an Excel spreadsheet to capture as much information as possible. Economic loss assessments would benefit national planning and budgetary appropriations for disaster response and recovery.

Vanuatu was new to the system (since 2011), building capacity and learning as they went along.

Cook Islands sought clarification on damage and loss as they used Excel to capture damage data but loss was more difficult to assess as it concerned translating economic value to loss. Post disaster work through the Ministry of Finance extended to fiscal implications for government, as well as exploration of beneficial insurance schemes.

SPC's Manager, Natural Resource Economics and Governance, Paula Holland clarified that – when considering the economic cost of disasters – 'damage' refers to the value of physical assets damaged during a disaster while 'loss' refers to any costs that arise because of that damage[2]. She gave the example of a bridge destroyed during a storm, noting that the destroyed bridge would be classified as damage. She noted that damage costs are commonly assessed by PICs following a disaster. By comparison, she observed that the destroyed

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[1] Natural disasters in the Solomon Islands vol 1. [Sydney]: Radford, Deirdre A, 1992. Download http://www.pacificdisaster.net/pdnadmin/data/original/SLB_Nat_Disasters_v1_1992_s.pdf.pdf

Natural disasters in the Solomon Islands vol 2. [Sydney]: Radford, Deirdre A, 1992. Download http://www.pacificdisaster.net/pdnadmin/data/original/SLB_Nat_Disasters_v2_1992_s.pdf

Natural disasters in the Solomon Islands vol 3. [Sydney]: Radford, Deirdre A, 1991. Download http://www.pacificdisaster.net/pdnadmin/data/original/SLB_1992_Natural_disasters_Vol3.pdf

Solomon Islands final report: natural hazards and risk assessment in the Solomon Islands. [Sydney]: Blong, Russel J, 1992. Download http://www.pacificdisaster.net/pdnadmin/data/original/SLB_Nat_Disasters_v4_1992.pdf

[2] For information, see http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTURBANDEVELOPMENT/EXTDISMGMT/0,,contentMDK:20196047~menuPK:1415429~pagePK:210058~piPK:210062~theSitePK:341015,00.html

bridge could prevent workers from reaching their places of work to earn money, this cost being termed 'loss'. She emphasised the importance of including loss values in disaster assessments, noting that the recent Post Disaster Needs Assessment conducted in Fiji revealed that if only damage had been considered, the disaster would have been undervalued by 38 per cent (FJD 73.4 million).

Ms Holland noted that most Pacific island countries focused on valuing damage but that loss assessment was not common. Her later presentation would shed more light on these issues.

Tonga was well organised with damage assessments, having a manual and forms in place that were used. However, there was a lack of human resource to update the database. Staffing plans were in place but it would take time as planning and decision-making was required for national infrastructure development.

Kiribati felt their challenge was that they did not have many disasters to keep monitoring, measuring and managing. However, the linkages to climate change were relevant and could be incorporated with information management for this.

Collaboration among agencies was important and a good working relationship among various stakeholders vital to collecting damage and loss data, as well as using the validated information to plan and make decisions.

Participants then introduced themselves and explained the areas in which they worked and how it linked to disaster risk management.

6. SESSION 2
NATIONAL DAMAGE AND LOSS INFORMATION – EXPERIENCE AND CHALLENGES

National participants were given the opportunity to present their experiences and challenges in acquiring and using damage and loss information.

Samoa began the country presentations based on their experiences with tropical cyclone Evan in December 2012. Samoa is ranked 51 of 179 by the World Bank on the global climate risk index 2012. Damage was estimated at USD 103.3 million and loss at USD 100.6 million. The flow of information during the disaster was coordinated by DMO on white boards and on laptops. The first response group included police, fire and national health services in addition to land transport, water and electrical power authorities. An initial damage assessment (IDA) survey was completed after the disaster with a formal data collection exercise with partner agencies. Lessons learned included incomplete count of IDA data due to lack of village maps and movement of families to shelters and relatives for safety. Housing damage data was inaccurate due to inconsistent definitions of household, housing and damage. Validation of data occurred after comparison with census definitions on house typology and geographical information system (GIS) maps on household lists. The Bureau of Statistics compiled data for DMO with defined damage ratings that were then mapped by island and village. The sector-by-sector analysis on damage and loss was coordinated by DMO and submitted to Ministry of Finance (MoF). Samoa's DMO eight staff continue to be trained. Additional resources that are required include GIS, census reports and baseline information from each sector to be reported through various subcommittees. Benefits of damage and loss assessment (DaLA) information revolve around effective and efficient decision-making for short-term and long-term recovery. Challenges were centred around varying degrees of understanding by assessors, information capture gaps and overlaps on assessments which led to confusion among government agencies. These could be addressed by workshops to train assessors, reviewing forms after every disaster, taking into account lessons learned for continuous improvement, coordination of multi-sector approaches and strengthening preparedness activities.

Lessons learned:

1. Centralised coordination of data collection

2. Include people with disabilities, gender segregation and elderly

3. The importance of reviewing and updating baseline data to improve on gaps/missing data

4. Definitions that are clear and available

5. Quality control and assurance that validate data

6. Sector assessments that fill the gaps for baseline data that already exists

7. Cooperation and coordination before disasters to align responsibilities

8. Review of workflows improves system

Conducting DaLA to inform post disaster needs can support decision-making by progressing from intuition and experience to evidence-based informed decisions. Training in DaLA and PDNA before events due to changes in stakeholders and staff turnover is important to maintain effectiveness and efficiency. Strong leadership that does not ignore inclusiveness is important. Critical aspects of the process are highlighted by the coordination of the various sectors conducting aDaLA and post disaster needs assessments and integrating this by progressing through subcommittees for cabinet to act on and make timely decisions.

Solomon Islands presented their experiences in developing a disaster information management system (DIMS) with the assistance of SPC's Applied Geoscience and Technology Division (SOPAC) in capturing disaster information with GIS to support information management. In 2010, the Solomon Islands Government, with assistance from SOPAC, carried out assessments on landslide risks and flooding which led to the recognition of the need for information management. The recruitment of an intern resulted in research and data entry into the newly installed DesInventar system. With natural hazard records from 1568 to 1990, research was combined

to update the online database that utilises the DesInventar methodology. However, DesInventar is not yet fully utilised as much work remains to be done. A GIS database is being used for mapping and the publication 'Natural disasters in the Solomon Islands[3]', with four volumes, has proven useful during research and DRR activities. Solomon Islands use support from SOPAC but development has been halted due to human resource limitations. Challenges arise with workloads and data entry with limited numbers of personnel within DMO, as well as duplication of village names which makes disaggregation of data more difficult. Changes in political boundaries also affect past information as it will not fit into current boundaries. The DMO needs to work on standardising compatible assessment forms for collecting data that can be routinely entered into the database.

Diverse skills are needed for information management, ranging from data entry, analysis and GIS with technicians managing the technological end. Librarians and archivists can also work with meticulous attention to detail and knowledge of the impact of historical data to build a picture of trends and patterns. Assigning standardised naming conventions and codes to data, places, etc. will also assist in addressing challenges.

The Cook Islands presented their country risk profile, which also accounted for the migrant population not residing on the islands but with assets still in place. Migration and transfer of services with social loss due to migration lead to a struggling economy with loss of skilled labour. The snapshot of loss statistics as a result of the 2010 cyclone on Aitutaki stood at 80% devastation. Initial damages were estimated at NZD 15 million, and the NZD 5.5 million-recovery and reconstruction project was funded by the New Zealand Government. This was then topped up by the Cook Islands Government, utilising NZD 2.7 million worth of transferred resources from other core services. Reactions were to set up a disaster emergency trust fund to quickly access funds for future disasters and to overcome the delay in getting surveys off the ground and working towards building disaster resilience.

Emergency Management Cook Islands (EMCI) is working with PCRAFI, highlighting the significant lessons to improve communication, consultation, political will, cyclone insurance to cover sea water damage and not just rain water, timely and accurate financial reporting, as well as the ability of the IDA survey teams to access the trust fund for travel and logistics. The importance of political will cannot be overstated as members of cabinet can push through decision-making to activate critical services. The overestimated costs on initial assessments (NZD 15 million) were caused by poor data and limited information. Key services need to be launched immediately, necessitating that processes be streamlined to disband trust funds for relief activities without political interference. In order to access the trust funds, stakeholders must have plans, systems and processes in place, inclusive of information management to ensure there is value in the way in which funds are disbanded to carry out relief activities. The new Island Government Bill places autonomy on the mayor to manage assets on-island.

Strengthening confidence to move forward and work with champions, as well as motivating teams to collaborate are also key considerations. Geography is also a factor that continues to affect the region and needs to be factored into plans. When working with consultants, capacity building should always be part of the terms of reference to ensure sustainability, especially with information management.

When new initiatives are commenced in-country, sustainability and capacity issues need to be balanced, especially when priorities are taken out of the national queue. The National Disaster Management Offices (NDMOs) need to manage this process and, where information management is concerned with limited staffing personnel, NDMOs need to be skilled at working smarter, not harder by using available technology and opportunities for online training.

The NDMOs could also assess whether they are utilising the skills and assets at the Bureau of Statistics and GIS mapping. When talking about the collaboration between national statistics and disaster management offices, Malaefono Taua, Assistant Chief Executive Officer, Samoa Bureau of Statistics, urged, 'You've got to make those people your friends because they can help you with your surveys, mapping and data analyses'. Exercising with trial data from ministries on data and information management for disaster preparedness and response is a good idea. Some barriers to cohesive collaboration are the inability of accessing specialised databases from outside the agency network, openly sharing information and permitting other agencies to have access

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[3]   Natural disasters in the Solomon Islands vol 1. [Sydney]: Radford, Deirdre A, 1992. Download http://www.pacificdisaster.net/ pdnadmin/data/original/SLB_Nat_Disasters_v1_1992_s.pdf.pdf

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     Natural disasters in the Solomon Islands vol 3. [Sydney]: Radford, Deirdre A, 1991. Download http://www.pacificdisaster.net/ pdnadmin/data/original/SLB_1992_Natural_disasters_Vol3.pdf

     Solomon Islands final report : natural hazards and risk assessment in the Solomon Islands. [Sydney] : Blong, Russel J, 1992. Download http://www.pacificdisaster.net/pdnadmin/data/original/SLB_Nat_Disasters_v4_1992.pdf

to individual databases, while retaining write permissions in-house. Technology or connectivity limitations also impede information sharing, apart from trust issues or the old adage that information is power. In this modern era, shared information enhances power and information sharing policies or agreements could facilitate improved access.

Elise Huffer, SPC's Human Development Programme Adviser (Culture) provided a brief overview of how disaster management addresses culture. Heritage and cultural sites damaged during disasters are accounted for in social losses but it often gets lost in the process. She said that perhaps countries could also factor in how they measure the impact of the percent of their labour force that is involved in the production of handicraft or carvings, etc. Samoa has already assessed cultural sites that are identified for conservation and preservation. The Pacific intangible cultural heritage mapping toolkit books were handed out courtesy of SPC's Human Development Programme. A recently released technical paper (United Nations Framework Convention on Climate Change (UNFCCC)) on damage and loss talks about cultural heritage. Cook Islands environment services mapped out cultural sites with inherent environment impact assessment information that NDMO includes in the disaster management plan.

One important aspect on the future focus for damage and loss information management was discussed by participants. Cook Islands identified their priority as PDaLo, while Kiribati was finalising their national plan with a strategy to develop a national database for the national statistics office incorporating damage and loss into that phase. Tonga placed PDaLo on their critical system list. Vanuatu was collecting data through various means and looking at the possibility of collecting economic loss when rapid assessments are done by cluster member agencies. Samoa had the opportunity to be trained on post disaster needs assessment in Fiji and found it informative and useful, noting that it was important to understand damage and loss.

The priority would be to recommend training for sector coordinators so that assessors are all on the same page. Differentiating activities under recovery and reconstruction, etc. is important to feed into the PDaLo information system. Standard forms are required to eliminate duplication of data. The Solomon Islands intend to work on improving their information management capacity through their integrated national planning with development aid. National damage and loss needs to be consistent and accessible with adequate human resources.

Participants agreed that government services are information-based. When information is requested, there should be resources to facilitate this.

7. SESSION 3
PACIFIC DAMAGE AND LOSS DATABASE – RATIONALE AND INTRODUCTION

Nicole Daniels of SPC provided a detailed summary of DesInventar and the PDaLo database. Ms Daniels had been contracted to establish a Pacific DesInventar, since renamed PDaLo, and to update existing documentation on its use and maintenance. Information from PDN, PCRAFI (consequence records) and other validated sources were incorporated in PDaLo to build a standardised interface of variables, scaled by time and geo-referenced spatial network. A process flow for information management was developed to guide database users. Quality control was incorporated into the process from data import to online research and duplications were cross-checked, especially between the PDN and PCRAFI databases. Protocols and formulas were developed and implemented to solve the problem of inconsistencies in language, records and details. Challenges concerning consultants who did not communicate with each other were overcome by daily and weekly meetings for information exchange to commence. Further research was required to fill gaps after the initial migration was done. Records that skewed the analysed information were also identified and definitions were tightened and standardised for all associated analysis tools. Recommendations centred on the need for better access to information at national level, aligning PDNA parameters, using local geographical codes and statistical map standards.

Quality control was paramount. Lack of data and loss of records were known issues. However, country data shared could not potentially be wiped out by unfortunate disasters as the data that was collected would still be available through record copies in PDN or with other such regional databases. Data collection plan priorities, cyclone inventories and country impact data also exist on other development partner databases that the region may not be privy to, hence national plans should take these into account.

A demonstration of the DesInventar methodology which is used in the PDaLo database was presented, including the process flow. Ms Daniels also mentioned statistics of records validated from PDN and consequences databases, newly created records and age-sensitive records without details. Setting priorities within the diversity of data and records was important, as well as meticulous attention to detail.

8. SESSION 4
MAPPING EXERCISE – INFORMATION FLOW ON NATIONAL LEVEL

The facilitator explained the need to identify the information processes currently used for damage and loss data flows before, during and after disasters. The participants were divided into three groups and tasked to map out flowcharts to show information flows, including quality control, validation, system checks and identification of gaps.

Group representatives reported to plenary regarding challenges and priority opportunities encompassing the following:

Patrick Arioka (Cook Islands)
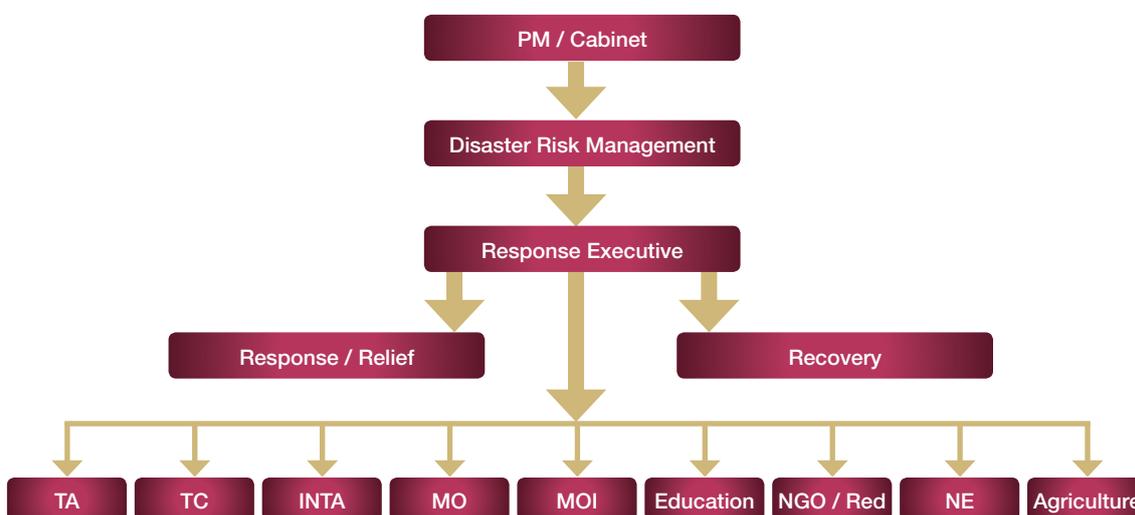
Figure 1: Cook Islands information flow hierarchy

The importance of to establishing correct baseline information such as household names is key, so as to avoid duplication and information gaps. Instead of working in silos, it is envisaged to have clusters such as health and nutrition, infrastructure, etc. The International Organization of Standardization (ISO), IDA and sector surveys flow upwards with decisions and State of Disaster declarations flowing down.

Toai Bartley (Samoa)

A Social Sector Housing matrix was compiled with lessons learned and outlined below.

Table 1: Samoa Social Sector / Housing

SOCIAL SECTOR/ HOUSING	BEFORE DISASTER	DURING DISASTER	AFTER DISASTER
Data	• Collect baseline Information on the number of houses available at SBS (Census Report) • Identifying Typology of houses • Costing of houses prior to disaster from MWTI (building section) • Geographical locations of households		• Post Disaster Data on type of Damages, total number of houses by geographical locations • Loss Data based on the temporary shelter, relocation of evacuees, clearing of debris and rubble

SOCIAL SECTOR/ HOUSING	BEFORE DISASTER	DURING DISASTER	AFTER DISASTER
System	• Pre-disaster workshops/ meetings with DAC • Conduct Top table exercises to familiarise personnel involved in the operation	• Activate the DMO System/ Communication and information systems - acted upon the confirmation from weather office • Record and monitor updates/ information from communities with regards to damages etc	• Carry out IDA by various subcommittees and report back to DMO • Sector by Sector Detailed Assessments were carried out to verify information based on respective sectors
Roles/Capacities/ Agencies	• Briefing of subcommittees / Response Subcommittee was undertaken	• Response Subcommittee specifically the First Response committee was activated!!	• Continuation of assigned tasks as well as reporting/ updating information to DMO regarding
Communication	• Awareness programs for communities and sector awareness • DAC meetings • Community consultations	• Coordination and Cooperation amongst sectors	• Coordination and Cooperation amongst sectors • Sharing of update/progress reports amongst various subcommittees/sectors

LESSONS LEARNT	WAY FORWARD

1. Data
  i. Terminology used was unclear (eg: household vs number of people, Affected vs Victims, Relocation vs Evacuees vs Displaced
  ii. Duplication of Information
	i. Provide a clear definition on the use of terms
	ii. Information sharing amongst sectors to avoid duplication

2. Systems i. Poor attendance of sectors during workshops and exercises	i. Enforce participation of sectors in all DRM activities

3. Roles/ Capacities/Agencies
  i. Overlap of sector functions
  ii. Limited Resources needed
	i. Roles and Responsibilities are spelt out clearly
	ii. Identification resources on what is needed before an event

4. Communication i. Information Break down from the leading Agency to the committee	i. Regular subcommittee meetings to clear misunderstandings

Michael Foon (Kiribati)

Feedback on collating information into a single system as part of the joint national strategy on DRM and climate change was presented as a short PowerPoint which is outlined below.

Part 1

Identify damage and loss information process before / during / after a disaster with:

- Data
  - Information and data exist but fragmented across sectors
  - During major events, data is collected through the sectors processes and information fed to central agencies. (no formal central process)
- Systems
  - Different systems exist across sectors (e.g. PRISM at NSO, GIS databases across different government departments, etc)
  - This includes web portals for some departments e.g. climate.gov.ki
- Roles / Capacities / Agencies
  - Each department / sector responsible for collection and collection of respective datasets
  - Capacity exist (but limited) across respective agencies for management of their own datasets and systems
  - Need central agencies such as NSO to coordinate and centralize information processes and systems
- Communication
  - Seminars, workshops, publications and web portals

Future Directions:

Kiribati Joint Implementation Plan (KJIP) for DRM and CCA

2.1 Develop a National Data and Information Centre (incl. GIS) to coordinate, share and manage disaster risk and climate change related information for improved decision making and increased effectiveness and efficiency (Data Centre to cover socio-economic, environmental data, GIS & maps)

- **Stock taking of available data bases, existing data sharing mechanisms (e.g. websites, publications), responsibilities and needs**

- Design a concept for data and information management based on the results of the stock take and develop a **national data sharing protocol for internal decision making and development needs**

- Establish the **National Data and Information Centre** (potentially under existing National Statistics Office, linked to existing national and regional portals such as Pacific Disaster Net and Pacific Climate Change Portal)

- Establish and support a **Kiribati National Data and Information Sharing Group**

- (Total cost: $ 200,854.00)

    Other e.gs in the KJIP - Analysis of data sets based on needs

    - Strengthen capacities to collect, analyse, monitor and manage data

Mafua Maka (Tonga)

Focussing on their system, agency roles and responsibilities and the flow of information, both down and up the hierarchy was elaborated on in a short PowerPoint presentation, of which the tabulated process before, during and after disasters is attached as outlined below.

Table 2: Tonga – Information flow on national level

	BEFORE	DURING	AFTER
DATA	Household Census (Baseline data) Emergency Fund Evacuation Plan	IDA Immediate relief needs	Recovery needs-Costs Emergency Fund National Infrastructure Investment Plan (NIIP)
SYSTEM	Media Public Consultation (Fono) Early Warning (Siren)	Report from NEMO and MIA (Internal Affairs)	Reports from Ministry of Infrastructure (NEMO)
ROLES	NEMO Community Awareness Sector disaster plan NEMO Corporate Plan GIS Unit – hazard map National Emergency Management Committee Statistics Department	NEOC Coordination Initial damage assessment	MOI (Roads, Transport) Housing – Building Control Health facilities – MOH School – Ministry of Education
COMMUNICATION	National Emergency Management Committee	Village Emergency Committee Island Emergency Committee National Emergency Operation Committee	National Emergency Recovery Committee

Ropate Tuikerawa (Fiji)

Highlighting the phases of before, during and after disasters, the Melanesian group of Fiji, Vanuatu and the Solomon Islands profiled data, systems, roles and capacities and communication as outlined below.

Table 3: Melanesian countries' communications flow before, during and after disasters

	BEFORE	DURING	AFTER
Data	Census Statistics Office NDMO Sharing between ministries and agencies	Decision-making National Emergency Operations Centre (NEOC) Verification, analyses Prioritise	Response Relief Logistics
Systems	Community profiles Mapping exercises	Sitreps (Situation Reports) Media, emails, fax Manuals	Communication Assessment form
Roles/ Capacities/ Agencies	Statistics office compiles data Fiji NDC	NEOC, Division, District, Village, Province	Multi agency Government Cluster groups Demarcation of relief responsibilities
Communication	Meetings/Workshops Public awareness, SMS, emails at national, divisional and district and village levels	SMS, high frequency radio, emails, fax, newspaper, landlines	Reports Assessments IDA Detailed Sectoral Assessment (DSA)

Litea Biukoto, SPC's Senior Adviser Risk Reduction summarised the discussions of day one as food for thought, the highlights of which are detailed below.

'The key message of '*you don't know what you don't know*' and '*you cannot manage what you don't measure*' lies at the heart of information management. The importance of information to underpin decision-making has been evident in discussions and questions that arose. There is a general awareness that information exists, although, it may not be adequately shared'. This information exists in different formats and the usefulness of the census household surveys was emphasised. The challenge of limited capacities was noted and it was encouraging to hear NDMOs say that they could supplement their limited capacities with resources from other ministries.

Datacards and extensions were a common starting point to make comparisons for standardising templates and data collection methodologies as this was lacking across PICs. The types of disasters, especially new and emerging threats in the region and, in particular, the ongoing saline water intrusion and coastal erosion are impacts that generally do not tend to make headlines in developed countries.

In terms of the quantification of damages and capacity to calculate loss and damage, each of the PICs lacks capacity to calculate losses, especially non-economic losses such as culture, which are not usually taken into consideration during assessments.

9. SESSION 5
MAPPING EXERCISE - LINKS
PDaLo, PDNA, DaLA, PCRAFI, PDN

Damage and loss information is contained and used in different formats across various platforms. Presentations on Pacific Disaster Net, Pacific Damage and Loss database, PCRAFI Pacific Risk Information System and the Post Disaster Needs Assessment highlighted where and how each is managed. Participants were encouraged to work in groups after the presentation and tasked to list what country information should be included in country damage and loss and risk management profiles.

PDN

Fane Dinono and **Sereima Kalouniviti** of the PDN team at SPC presented the content and design of PDN. This included contacts, documents, a calendar and events listing with linkages to a wiki page as a living and growing resource for national and regional disaster management staff and stakeholders. Challenges prompted the team to work on a redesign to make the system more user-friendly, as well as to encourage information professionals to share data and information. With improved understanding of DRM in the region, there has been a noticeable improvement in knowledge-based decision-making and awareness of the impact of disasters on development.

Regarding feed of data and information or reports that are provided to the PDN team to keep the database updated, there is no regular feed from countries, and participants were encouraged to provide more status updates and reports to PDN for donor and partner organisation visibility. This could lead to opportunities to link all DRM documentation for countries. Once the redesigned PDN technology is finalised and the system is up and running, the countries could make use of the PDN team to upload their catalogued documents on PDN with links to NDMO websites.

PDaLo and PCRAFI

The question of how these systems link was discussed. When there is a disaster, there are alerts in PDN obtained as a feed from various sources like meteorological services, the Pacific Tsunami Warning Centre and other global natural disaster alert services. The PDN team checks facts with focal points in-country and request a situation report or ask to be added to the mailing list for status updates. UNOCHA also feeds into the system and information is catalogued and analysed for data entry into the PDaLo system. On wrapping up the PDaLo database, Jutta May, Advisor, Information Management, reviewed the availability of data cards and country profiles with visual displays of graphs on damage and loss information.

Litea Biukoto shared photos of disaster impacts in PICs and focussed her presentation on PCRAFI and the need to collect information for a purpose. The PCRAFI was implemented in the region and included 15 countries. The disaster risk assessment conducted quantified tropical cyclone, earthquake and tsunami risk to buildings, infrastructure and crops in monetary terms and population as estimated causalities. The data used in the risk assessment included characterised buildings, infrastructure and crops, population data from the most recent national census, inventory of earthquakes, cyclones and tsunamis in the region and damage and loss information from past disasters. The workshop was informed that a substantial volume of information on past disasters currently exist on Pacific Disaster Net. The comprehensive database of risk information is available online on the Pacific Risk Information System along with the country risk profiles at pcrafi.sopac.org.

PDNA and DaLA

Paula Holland, SPC's Natural resource Economics and Governance Manager provided an overview on Post Disaster Needs Assessments. She observed that several types of disaster assessment occur over time following a disaster event and that these are undertaken for different purposes. For example, immediate assessments for

humanitarian purposes can inform how many injured need medical or water relief, and damage assessments (initial and detailed) can ascertain how many houses were damaged and the number of shelters that need to be opened, etc. Each assessment has a different purpose and occurs at different stages. They are not necessarily interchangeable. Traditionally in the Pacific, the impact on the economy has principally focussed assessments on damage but does not cover loss, while social needs assessment is only variously included in recovery planning. As a result, Ms Holland observed that SPC is looking to support PICs conducting 'Post Disaster Needs Assessments' (PDNAs) of disasters - a methodology to look at the full economic impact (damage and loss, as well as social impact) of disasters.

This information can then be used by PICs to better inform medium and long-term recovery planning. Ms Holland stated that PDNAs occur after the humanitarian phase of a disaster is over, usually 3-6 weeks after an event.

Table 4 outlines the links between PDN, PDaLo, PCRAFI and PDNA.

Table 4: Links between PDN, PDaLo, PCRAFI and PDNA

SYSTEM SPECS	PDN	PDALO	PCRAFI	PDNA
Data Type Hosted	Alerts Documents - Situation reports, newspaper articles, assessments etc. - new and history Link to PDaLo Contacts Calendar	Damage and loss data - validated and quality controlled	Historical Hazard and Loss Database Probabilistic Hazard Models Geo-referenced Exposure Database Catastrophe Risk Models and Profiles	Methodology Values - damage, loss, macroeconomic impact Data stored in PDaLo
Volume	+11,000 Documents +750 Contacts +750 Calendar	Total – 1176 Conseq – 600 PDN – 564 New – 12	Spatial and tabular datasets Documents	3
Access	www.pacificdisaster.net	www.pdalo.net	pcrafi.sopac.org	Reports stored in Pacific Disaster Net
Information Preparation and Knowledge to Support Decision-Making	Pacific Disaster Net Team – Jutta May	Risk Reduction Team – Litea Biukoto	RRT, national counterparts	Government

Plans

SPC is working to establish a regional pool of experts on disaster needs assessments, following discussions with the World Bank for capacity development. PDN contains all the documents and should be the first database searched and PDaLo contains numbers and charts produced for PIC governments to obtain relevant information they require.

Discussion

Vanuatu asked for the possibility of having only one database for all the information contained in the four systems (PDN, PDaLo, PCRAFI and PDNA). Each system was designed for specific purposes, although, the users are the same. SOPAC is consolidating data and discussions are ongoing to consolidate the interface. For now, countries can request exactly what they want and SOPAC staff can consolidate the data for them. When PDN was developed, the aim was a one-stop shop portal but that is impossible as no single system can cater for every DRM need. PCRAFI is also a large database. The current PDN redesign project brought to the fore new things such as the use of Google maps and how these can down the entire system. There were also issues with slow networks and interface clutter. The user journey is not really good with filters so the redesigned portal is going to be user-focused, easier to navigate and have a current look.

Samoa Bureau of Statistics was also aiming for one data management system that could be shared in the region with all PICs using the same software, implemented with SPC assistance. The possibility of entering information into the databases directly from PICs was discussed and, with PDN, this can be done. However, the system is not currently user-friendly. Until the redesigned portal goes live, the PDN team continues to enter the data for PICs.

Participants were urged to rest assured that the redesigned site would enable easier and better data entry from their in-country workstations. A common user interface for data entry from PICs is desirable for ownership and control of information that is freely available for all PICs. GIS layers progressed over time can be used, as well as extracting data in Excel for use on other systems. The interoperability of a system leads to complementarity and improved linkages.

When the PDN development started, there was no knowledge-base for information sources with searching the web the main practice, whereas, now, there are regular feeds received from PIC counterparts.

Existing regional information systems and identified information from session 4 were analysed in groups to ascertain gaps, needs and improvements.

Group Feedback

Answering the question, 'What should be in a country profile?' participants provided the following:

Table 5: Priority sorting by hierarchy of country profile damage and loss information

1	Demographic profile:
	Socioeconomic indicators (Millennium Development Goals/National Minimum Development Indicators) –PICs update their own profiles
	Strategies for the development
	Population (household, age, sex, etc.)
	Impact on population (migration overseas and to outer islands)
2	Damage and loss (Sectorial and Event)
	PDaLo historical trends going back 10 years post disaster (comparison, analyses, trends, temporal)
	Deaths
	Damage
	Casualties
	Loss
3	Sector profile:
	Sector reports (agriculture, health, education, household economic statistics) DRM focus
	Reports: strategic plan, annual plan, disaster management plan for each ministry (identification of available resources)
4	Economic loss by event to:
	Sectors (tourism, agriculture, etc.)
	Utilities (water and power)
5	Data Presentation
	Tabular or forms
	Graphs (pies, bars, charts)
	Maps (illustrations)
6	Additional links
	Situation reports
	Weather bulletins and marine weather bulletins
	Current events
	Arrangements (National DRM)
7	National Context
	Developing nation (not just gross domestic product descriptors)
	Geographical conditions (larger ocean area for small islands)
	Development constraints and weaknesses

8	Damage by event to:
	Utilities (water, power, fuel, sanitation)
	Communications (internet, radio, television)
	Transportation (road, sea and air)
9	References
	Sources of information collection for substance/justification
	Accuracy of static information (quality control)
10	Scale of profile: National, Island, Temporal

Initial feedback from countries on what should be in a country profile is attached as Annex 3.

10. SESSION 6
WORKING GROUP – IDENTIFY GAPS AND NEEDS

Cristina Casella, SPC's Adviser, DRM and Climate Change Policy provided a presentation on the roadmap process for the preparation of a new Strategy for Climate and Disaster Resilient Development in the Pacific (SRDP). At the global level for DRM there is the Hyogo Framework for Action (HFA) and for climate change (CC) the UN Framework Convention on Climate Change (UNFCCC). These two global frameworks are translated at the regional level in the Pacific, into the Pacific Regional DRM Framework for Action (RFA) and the Pacific Islands Framework for Action on Climate Change (PIFACC), respectively. Both of these frameworks expire in 2015. The new strategy currently being developed for the region — SRDP — will replace these two frameworks. The Pacific region is working collaboratively to achieve a regional convergence on disaster management and climate change. It will be the first region in the world to develop a comprehensive integrated CC/DRM strategic framework at regional level. Although DRM and CC have traditionally operated independently, the integration raises challenges that are being overcome because of the shared focus on reducing vulnerability and increasing resilience. Coordination makes more efficient use of resources and capacities. It also improves coherence across policies, programmes and projects. Most importantly, however, it facilitates the process of mainstreaming these cross-cutting issues across the various sectors (water, infrastructure, environment, health, agriculture, transport, economic development, education, etc.). Deliverables of the roadmap process include the strategy, but also a synthesis report on the implementation of the current regional frameworks (RFA and PIFACC) and a compendium of case studies on DRM and climate change initiatives undertaken in the Pacific in recent years. The consultation process with relevant stakeholders is inclusive with engagement at national and regional level. With a focus on transparency, the roadmap process is owned by Pacific Island Countries and Territories (PICTs), through a Steering Committee that guides and leads the process. A technical working group comprised of SPC, the Secretariat of the Pacific Regional Environment Programme (SPREP), Pacific Islands Forum Secretariat (PIFS), University of the South Pacific (USP), UNDP and UNISDR supports this process by providing expert advice, facilitating consultations at national and regional level, and providing information and communication to stakeholders.

The formulation and drafting process have started and will continue in 2014, with a view to having the draft strategy endorsed by the Steering Committee in April 2014 and officially endorsed by the region in 2014 and 2015.

With regard to the update of the HFA review, the latest Pacific regional progress report on implementation of the HFA was published in May 2013 and has been taken into account in the process of development of the new strategy. All documents are available online via the PDN portal.

Anna Rios Wilks, Natural Resource Economist with SPC provided a presentation on indexing the costs of disasters – that is, presenting disaster costs determined over time in common year terms. Ms Rios Wilks pointed out that the costs of disaster calculated at the time are 'nominal' – they express the cost of a disaster at that point in time. However, she also noted that the value of money changes over time (usually falling because of inflation). As a result, the nominal cost of a disaster needs to be indexed if we are to reveal its true magnitude today, or compare it against disasters that occur in other years.

Without indexing losses, countries are liable to grossly underestimate the true cost of disasters. Implications of underestimating losses from historical records are uninformed decisions being made like sub-optimal allocation of government budgets or of catastrophe risk insurance.

Jutta May presented the workshop report, framework and scorecard on Information and Knowledge Management for Disaster Risk Reduction (IKM4DRR) which was developed in response to requests for a framework on data, information and knowledge management. The following issues were identified by the

IKM4DRR community and underline the need for a systematic approach to guide the development of information and knowledge management (IKM) systems at all levels:

- Information is scattered among various agencies and institutions with limited coherence, coordination and sharing

- Information about hazard events, exposure, vulnerability, and the impacts of disasters is often not systematically collected

- Limited analysis has been done to understand the trends, spatial and temporal impacts of potential disaster risks and their impacts

- Risk information is not systematically used for policy and decision-making

- There are no agreed-upon standards and shared definitions in IKM for DRR and CC agreements

- There is little integration of knowledge systems at regional, national and community levels

- There is inadequate collaboration between the different organizations working in DRR or related areas such as CC agreements and the environment

- Civil society and private sector involvement is often limited

- Information is often collected in different languages but insufficient resources are allocated or used for translation

- Cultural context as a major influence to approaches in disaster risk reduction and disaster risk management is rarely considered

- Incentives and political backing for information sharing are insufficient or lacking, and responsibilities and accountabilities for IKM are not defined

- Issues of power and competition at institutional and other levels get in the way of sharing information

- Dedicated capacity and skill development in information and knowledge management are lacking

- Resources are not committed for sustainable IKM initiatives

Group Feedback

The participants had group discussions, using the scorecard on the issues identified above and assessing how the statements described their situation.

Table 6: Pacific Island Countries data gaps and needs identified

ISSUES IN IKM	MISSING DATA/GAPS	POTENTIAL SOLUTIONS
Data (collection, entry, update, analysis)	Lack of data on hazards, events and impacts, and poor data integration, resulting in inconsistencies when information is compartmentalised in sectors without centralization or harmonisation	Cataloguing, archiving and improving filing system (how, who) Open access policies for national data
	Information management human resources – limited capacities/skills for data entry and analysis	Capacity building – create positions and brainstorm with planning and statistics for capacity sharing/building. Regular meetings to avoid communication breakdown
	Bureaucratic processes and poor filing that hinder storage and accessibility	Conduct workshops to inform sectors of the critical need to have updated data and to secure accountability, and perhaps insert a clause and associated penalties in the current Act
	Differences in terminology	Need to provide clear definitions on terms by sector and harmonise into agreed standard terms
	Duplication of information	Information sharing by sectors to avoid duplication, possibly by developing an MoU on sharing to minimise accessibility issues
	No standard assessment form for sectors	Guideline for sectors to comply with so that an agreed template is used

ISSUES IN IKM	MISSING DATA/GAPS	POTENTIAL SOLUTIONS
Systems	Lack of data-sharing policies	Establish clear data-sharing policies
	Limited capacity of personnel responsible for activating system	Train NDMO staff on how to activate emergency centre
	Outdated technology (versions of databases, windows)	Update software and hardware
	Absence of backup system for data storage and high dependence on manual input	Backup systems need to be budgeted and automated tools developed and maintained
	Five databases in existence making coordination a challenge without capacity to maintain	Regional common interface for access by PICs with dedicated resources for capacity
Roles/ Responsibilities /Agencies	Overlapping	Terms of Reference (ToR) clearly defined by DAC (Disaster Advisory Committee)
	Lack of coordination and heavy reliance on public sector systems	Partnerships and networking with clear standard operating procedures and clear coordination
	Overlaps in roles and responsibilities	Roles being defined for sectors through committees, including who hosts datasets
	Lack of capacities (HR) and financial resources to facilitate processes and transfer raw data as analysed information to inform decision-making	Ministry policy and planning advice for prioritised critical posts to be requested for logistics and IT officers with adequate allocation of budget
	Joint national action plan process identifies gaps and willing to share information, including joint workshops with sectors	Assist to identify sharing, capacities, resources and clarifying expectations
Communication Systems	Information dissemination (Short Message Service (SMS), reports, etc.)	Improve communication links and share regular subcommittee meetings and reports on progress and updates
	Reliable network during events and speed dial for multiple service providers	Trial system before disaster to avoid clashes and overloading
	Accessibility to communication system	Adequate resources
	Limited publication medium at national level to communicate analysis outcomes to the public	Area reports available to communicate lessons learned
	Communication and information breakdown due to communication being conducted independently, leaving limited community understanding of existing programmes and organisations	Working with communications unit to develop national disaster risk management plan, to be integrated with climate change and client satisfaction survey on effectiveness of programmes
	Communications have unclear systems, are without a plan and there are no policies to channel communications down to the business/private sector/industry and community	Revise communications plan for phases before, during and after events, plus seek alternative communications equipment to mitigate any breakdown in telecommunication during events
	Communities: The main radio station is minimally maintained, which is limited to a few hours a day, leaving no systems to communicate warnings late at night, plus the change of AM to FM radio frequencies	Need to involve all stakeholders who provide radio coverage and establish a system for emergency broadcasts

Countries feedback on gaps and needs is attached as Annex 4

11. SESSION 7 WAY FORWARD

Group Feedback

Table 7: The recommended way forward

	6 MONTHS		1 YEAR		2 YEARS	
	REGIONAL	NATIONAL	REGIONAL	NATIONAL	REGIONAL	NATIONAL
Review and update	• existing data and information quality	• NDMO structure for 2015 and identify other needs and priorities		• relevant documents including plans and legislation	• existing information	• existing plans, regulations • communications strategy
Capacities (recruitment, training and awareness)	• assistance for national level capacities	• identify new positions inclusive of information and database officers, source funding for resource provision • Risk Reduction (RR) work within NDMO • stakeholder workshop for multiple sectors to have common understanding on collaboration and coordination for getting complete and accurate data	• information management • seek training assistance for capacity development on PDNA	• in-country training and awareness on disasters and data enhancement for NDMOs and other local government sectors • strengthen current capacities in staffing and finance and review national education profile	• data management and reporting	• recruit officers to be part of Risk Reduction Unit supporting information management system (IMS) (prioritise critical needs to make it demand and needs-driven)
Coordination and collaboration		• expand coordination of information management to sector level at grassroots	• cooperate with other ministries and departments that use DesInventar system	• involve all stakeholders and identify leadership plus confirm disaster and emergency roles and responsibilities		
Develop, standardise and implement	• Engage cluster sectors	• effectiveness of damage and loss templates, IDA forms and IMS processes • implement policies for DRM purposes so that vulnerability assessments are credible and supported by science, plus compile areas of concern into policy • set up system by stocktaking and mapping available information at all sectors • language identified and incorporated into governance documents to increase visibility • DesInventar work to continue		• terms of reference and MoUs relevant to information and data management • online version updated and useable • strengthen NDMO information collection and dissemination of processes	• database for disasters • common interface for regional information systems: PDN, PDaLo, PDNA and PCRAFI	• national databases for damage and loss that can feed into regional system • set up functioning IMS at Statistics Office

The next workshop or future in-country workshops could include finance and DRM, as well as policy and planning participants. The EDF 10 from the European Union (20 million over 5 years) for DRM can also be allocated for information management and NDMO directors can be reminded about this if funding is required for resource provision. Cost sharing among sectors for data analysis or for data updates and maintenance personnel can be encouraged if areas of responsibilities and the extent of work are agreed upon.

During the HFA review process, consultations identified priorities to be funded so the implementation plan was costed out. However, regular meeting costs were not set aside. Regional components can be sourced from the regional allocation of funds and national from the national allocation.

Suggested steps and activities were reviewed and set out as tabulated above.

Countries feedback on the way forward is attached as Annex 5.

12. SESSION 8
CLOSING

Participants handed in their completed workshop evaluation form and were thanked for their attention, contribution and the tasks that were successfully undertaken. Everyone was reminded that speaking at workshops and identifying issues and solutions was only the first step as the real results require work in-country, on the ground. However, SOPAC will be available to provide assistance, depending on funding available.

Tim Wilcox, Sub-regional Coordinator (Pacific) of UNISDR provided some closing remarks, stating that he found the workshop very useful and was impressed with the key issues and strengths identified. He went on to quote Colin Powell '*Experts often possess more data than judgement*' and encouraged participants not to turn into experts with more data but without judgement.

The PDaLo database was added value for the region and participants were urged not to feel overwhelmed with the amount of workload to get through. Assistance could be sought from partner agencies like national statistics offices to utilise their skilled staff to maintain and handle information management. 'Keep networking with other NDMOs to keep the momentum going', he stressed.

Mr Wilcox emphasised the need to index losses in order that today's value is known. With regard to media training on DRR, he stated that reporters loved useful and interesting figures where PDaLo could also be useful. This would allow articles to name a country and estimate how much they were expected to lose, in monetary terms, in a year through disasters. He advised, 'and make sure there is a succession plan for sustainability of work in-country, with data management from entry to analysis'. Participants agreed to advocate for PDaLo, to get positions financed and to show economic losses, in addition to damage costs, with heads of departments. All this information would feed into reports that reflect the actual status in the region.

Ms May thanked UNISDR for supporting the workshop and for continually collaborating with SPC on PDaLo. She spoke of how the work could continue on the national level with potential additional funding. Colleagues who presented and the team working to support the workshop were also thanked.

Shadrack Welegtabit, the Director NDMO Vanuatu gave a vote of thanks to SPC and UNISDR for a successful workshop. He felt it was well organised and contained fruitful discussions with lessons to take home and future activities to look forward to.

With another round of thanks, the workshop was closed at 4:50pm, Tuesday 29th October, 2013.

13. ANNEX 1
AGENDA

Day 1 - Monday 28th October

TIME	ACTIVITY	INTENDED OUTCOME
8.30am	Official Opening • Opening Prayer • Welcome by Timothy Wilcox, Sub-Regional Coordinator (Pacific), United Nations Office for Disaster Risk Reduction (UNISDR) • 'Setting the Scene' including definitions and issues – What are we talking about	• Context for the workshop established • Awareness about information management for damage and loss raised
9.00am	Session 1: Identification of damage and loss data experience with participants • "Line up" exercise and discussion o Question - Does your damage and loss information satisfy your needs? Or do you know a damage and loss information system which you want to implement?	• Better understanding about participants and their involvement with damage and loss information management • Experiences with good practice or gaps identified

9.30am	Session 2: National damage and loss information - Experience and challenges
	
	• Presentations of damage and loss data management experience
	  o Samoa (2 Presentations)
	  o Solomon Islands
	  o Cook Islands
	• Group Discussions:
	  o Question – Based on the experience shared, what is the future focus for damage and loss information management.
		• Experiences and lessons learnt are shared
		• Focus areas for the discussion about damage and loss information management are identified

10.30am	PHOTO and MORNING TEA	
10.45am	Session 3: Pacific Damage and Loss Database – Rationale and introduction • Why a damage and loss database? • Activities, challenges, status with manuals and reports	• Pacific Damage and Loss Database is introduced
12:30pm	LUNCH	

1:30pm	Session 4: Mapping exercise - Information flow on national level
	
	• Identify processes with
	  o Data
	  o Systems
	  o Roles/Capacities/Agencies
	  o Communication
		• Information for damage and loss during before and after an event is identified and mapped with priorities and challenges

3:00pm	AFTERNOON TEA	
3.15pm	Session 4 (Cont'd) • Group Discussions and mapping • Group Reports o Group representatives report back on challenges and priority opportunities	
5:00pm	End of Day 1	

Day 2 - Tuesday 29th October

TIME	ACTIVITY	INTENDED OUTCOME
8.30am	Recap of Day 1	

8.40am	Session 5: Mapping exercise - Links PDaLo, PDNA, DaLA, PCRAFI, PDN
	
	• Which data is hosted in PDaLo, PCRAFI, PDN and PDNA, DaLA
	• How can the information be accessed
	• Who prepares information and knowledge to support decision making
	• Group Discussions:
	   o Which information shall be in a country profile for damage and loss
	• Group Reports
	   o Group representatives report on information in country profiles
		• Links between existing regional information systems and the identified information from session 4 are explained and clarified
		• Country profiles for damage and loss are guided by recommendations for information to be included

10.30am	MORNING TEA	
10.45am	Session 5 (Cont'd)	
12.30pm	LUNCH	

1.30pm	Session 6: Working group - Identify gaps and needs
	
	• New trends
	   o Climate Change Adaptation and 2015
	   o Indexing losses
	   o IKM4DRR Framework
	• What is missing in the information flow and how to address the gap/s
	   o Data (collection, entry, update, analysis)
	   o Systems
	   o Roles/Capacities/Agencies
	   o Communication System/s
	• Group Discussions:
	   o Which aspects require special attention and resources in the information flow and how can gaps be addressed
	• Group Reports
	   o Group representatives report back on gaps and suggested solutions
		• Information management trends are shared and discussed
		• Gaps in the information flow are identified and solutions are suggested

3:00pm	AFTERNOON TEA	

3.15pm	Session 7: Way Forward
	
	   o Next steps and activities in 6 months, 1 year, 2 years
	• Group Discussions:
	   o What steps and activities are important and doable in the near, mid-term and longer-term future
	• Group Reports
	   o Group representatives report back on suggested steps and activities
	• Discussions:
	   o Review and prioritize the suggested steps and activities
		• Activities for future damage and loss information management are identified and prioritized

4.30pm	Session 8: Closing • Review Way forward • Closing Remarks by Timothy Wilcox, Sub-Regional Coordinator (Pacific), UNISDR	
5.00pm	End of Workshop	

14. ANNEX 2
LIST OF PARTICIPANTS

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Pacific Damage and Loss (PDaLo) Workshop
Suva, Fiji, 28 – 29 October 2013

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Secretariat of the Pacific Community, Suva
Tuesday 29 October 2013

15. ANNEX 3
FEEDBACK ON SESSION 5

Table 8: Initial feedback from countries on what should be in a country profile.

ITEMS	GROUP

Demographic profile:
   socioeconomic indicators (MDG goals /NMDI) – PIC update themselves
   strategies for the development
	Samoa

Portal for PICs to update their own national data	

Sector profile:
   Sector reports (agriculture, health, education etc)
   Strategic plan
   Annual plan
   Disaster management plan (listing available resources)	

Damage by event to:
   Utilities
   Communications (internet, radio, TV)
   Transportation (road, sea and air)
	Tonga

Economic loss by event to:
   Sectors (tourism, agriculture etc)
   Utilities (water and power)	

Population (household, age, sex etc)	Fiji, Vanuatu and Solomon Is

Damage and loss
   Sectoral
   Specific hazard
   History (comparison, analyses, trends, temporal)	

Additional links
   Sitrep
   Weather bulletin and marine weather bulletin
   Current events
   Arrangements (NDRM)	

Data Presentation
   Tabular or forms
   Graphs (pie, bar, charts)
   Maps (illustrations)	

Target Groups (who contribute and consume information)
   Planning, Finance, Infrastructure and other Government agencies
   Donor partners (international and regional)	

PDaLo historical trends going back 10 years post disaster
   Deaths
   Damage
   Casualties
   Loss
   Impact on population (migration overseas and to outer islands)
   Tourism arrivals impact post disaster
	Cook Is

Earthquake events (seismic activity – daily occurrence for some PICs) Note: recording events without damage and loss increases volume	
Summary table on forecast 10 years out (modeling) Monetary value on expected cost to PIC	

Context (abstract of relevant aspects)
   Developing nation (not just GDP descriptors)
   Geographical conditions (larger ocean area for small islands)
   Accuracy of static information (quality control)	

References Sources of information collection for substance / justification	

ITEMS	GROUP
Access and distribution by events Demographic info of population Statistics of building attributes (typography) Assets each household has Sector profiles with historical background Assessment report of events that occur Different island report profiles	Kiribati
Target audience: Information should be for everyone (humanitarian assistance providers, donors, national Government ministries and NDMO)	PDN

16. ANNEX 4
FEEDBACK ON SESSION 6

Group feedback identified gaps in data for PICs:

Fiji / Vanuatu and Solomon Islands

Table 9: Melanesian countries' feedback on data gaps.

	MISSING / GAPS	SOLUTIONS
Data	Data integration Technology IM (HR) Poor and lack of data Processes and poor filing	Cataloguing and archiving Open access to data Improve filing system (how, who) Capacity building
Systems	Data sharing policies Capacities Outdated versions (databases, windows) Backup system	Clear data sharing policies Updated software and hardware
Roles/Responsibilities /Agencies	Lack capacities (HR) Overlapping Lack of coordination	Coordination to be clear SOP Partnerships and networking
Communication System	Information dissemination (SMS, reports etc) Reliable network Accessibility to communication system Change of AM to FM radio frequencies	Improve communication links Adequate resources Area reports available to communicate lessons learned

Samoa

Data: there were differences in terminology – need to provide clear definitions on terms by sector and harmonise into agreed standard terms

Duplication of information – information sharing by sectors to avoid duplication possibly by developing an MOU on sharing to minimise accessibility issues

Standard assessment form for sectors – guideline for sectors to comply with so that an agreed template is used

Data entry capacity with analysis skills – create position

System: limited capacity of personnel responsible for activating system – NDMO train staff on how to activate emergency centre

Absence of backup system for data storage – needs to be budgeted

Telecommunications: speed dial for multiple service providers – trial system before disaster to avoid clashes and overloading

Overlaps on roles and responsibilities – TOR clearly defined by DAC (disaster advisory committee)

Limited resources with one vehicle – outsourced funding

Incentive for participants at in-house training

Communication and information breakdown – regular subcommittee meetings and reports on progress and updates

Limited community understanding of existing programmes and organisations – client satisfaction survey on effectiveness of programmes

Buy-in and cooperation is big for Samoa.

Data entry and analysis – brainstorm with planning and stats for capacity sharing/building. Regular meetings to avoid communication breakdown

Fiji appreciated the efforts elaborated on by Samoa NDMO particularly on survey and community feedback. Fiji has had lots of exercises but testing the effectiveness of the systems is yet to be done.

Tonga

Data: process from collection to analysis – updating inconsistencies when gathered from various sectors and conducting workshops to inform sectors of the critical need to have updated data and to secure accountability and perhaps insert a clause and associated penalties in the current Act

Request assistance from emergency fund or donor to develop NEMO office to have a database

Roles: lack of staffing and financial resources to facilitate processes – infrastructure ministry policy and planning advice for prioritised critical posts request for logistics and IT officers with adequate allocation of budget

Communications: unclear system and policy – revise communications plan for phases before, during and after events plus communication breakdown in telecommunication during events then need to seek alternative communications equipment during the event

Cook Islands

Table 10: Cook Islands identification of gaps and needs

ISSUES IN INFORMATION AND KNOWLEDGE MANAGEMENT	DATA (COLLECTION, ENTRY, UPDATE, ANALYSIS)	SYSTEMS	ROLES / CAPACITIES / AGENCIES	COMMUNICATION SYSTEMS
Information scattered amongst agencies	There is no centralised system to harmonise DRM information Stock take of all data available amongst agencies	Some agencies have clear systems and some don't.	Limited capacity/resources (knowledge, tools, training) Awareness of DRM data capturing to help NDMO information needs	Communication is conducted independently Communication is not channelled down to the business/private sector/ industry and community
Limited Analysis to understand Trends	Inconsistent in terms of quality, not regularly updated	Highly dependent on manual input instead of automated tools (database)	Limited capacity to transfer raw data to inform decision making	Limited publication medium at national level to communicate analysis outcomes to the public
Civil Society, Private Sector is often limited	Data is not available	Reliance on public sector systems	Awareness of DRM data capturing to help Civil society and private sector information needs	No communication plan established for this sector Newly introduced to DRM information networks
Culture context rarely considered	Data is scattered and limited	Inadequate systems and tools	Limited capacity to transfer raw data to inform decision making	No communication plan established for this sector (DRM plan)
Dedicated capacity and skill development	Limited capacity to manage data for DRM purposes	There is no centralised system to harmonise DRM information	Roles does not incorporate DRM responsibilities (not included in JD)	Communication is absent

Kiribati

Collection, entry, update and analysis compartmentalised in sectors resulting in lack of data on hazard events and impacts

Systems: there are 5 in existence so trying to coordinate is a challenge as this needs capacity to maintain and need dedicated resources

Roles being defined for sectors through committees including who hosts datasets

Joint national action plan process – cost of activities 5 million identifies gaps and willing to share info including workshopping with sectors could assist to identify sharing, capacities, resources and clarifying expectations.

Communications have no policies so working with communications unit to develop national disaster risk management plan to be integrated with CC. With communities, there is another gap as the main radio station is maintained at a minimum, which is limited to few hours a day so no systems to communicate warnings late at night.

17. ANNEX 5
FEEDBACK ON SESSION 7

Table 11: National and regional level activities recommended as the way forward in six months, one year and two years

COUNTRY	6 MONTHS		1 YEAR		TWO YEARS	
	REGIONAL	NATIONAL	REGIONAL	NATIONAL	REGIONAL	NATIONAL
Samoa	Review of data collected and update information, update existing data in terms of quality	Develop templates for DaLo, test effectiveness Source funding for resource provision Review DMO structure and identify other needs and priorities New posts under reviewed structure	Constant capacity building	Constant in-country training and awareness with development of TORs and MOUs relevant to information and data management	Develop a standard database for disaster Review existing information	Review existing plans, regulations
Cook Islands	Engage cluster sector	Expand coordination of information management to sector level at grassroots Establish advisory committee in Disaster Emergency Coordination Compliance Authority (DECCA) to implement policies for DRM purposes so that vulnerability assessments are credible and supported by science plus compile areas of concern into policy		Training for disaster awareness and data enhancement Involving all stakeholders and identify leadership plus confirm Disaster Emergency Coordination Compliance Authority roles and responsibilities		
Vanuatu		Review structure for 2015 to include information and database officer to handle data entry Language identified and incorporated into governance documents to increase visibility	Capacity building to continue to be strengthened Could cooperate with GeoHazards team as they use DesInventar system once model data is taken out and real data is strengthened	Review relevant documents including plans and legislation Capacity building to continue to be strengthened especially for new staff to NDMO and extended to other local government sectors		
Kiribati	Assistance in HR capacity	Set up system by stocktaking and mapping available information at all sectors		Workshop in-country to raise awareness	Regional system PDN, PDaLo, PDNA and PCRAFI to have common interface	Set up functioning IMS at Statistics Office
Solomon Islands		Review IMS and processes DesInventsar work to continue Training on RR work within NDMO	Seek training assistance for capacity development on PDNA	Online version updated and useable Strengthen provincial emergency control centre (PEOC) and NEOC for collection and dissemination of information		Recruit officers to be part of Risk Reduction Unit supporting IMS (prioritise critical needs to make it demand and needs driven)
Tonga	Update country data	Workshop with stakeholder sectors to have common understanding on collaboration and coordination on getting complete and accurate data Review IDA form and standardise at all levels to suit PDaLo requirements	Capacity building in IM	Strengthen current capacities in staffing and finance and review national education profile	Capacity building in data management and reporting	Develop and design database for DaLo for Tonga Review SPC communications strategy

18. ANNEX 6
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12062

Pacific Damage and Loss Database Workshop : Solomon Islands country presentation

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Session 5 : mapping exercise - links PDaLO, PDN, PCRAFI, PDNA

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12125

We don't know what we don't know [Pacific Damage and Loss (PDaLo)]

SPC News, 31 October 2013. In his opening address at the Pacific Damage and Loss (PDaLo) Workshop, Timothy Wilcox, Sub-Regional Coordinator (Pacific) of the United Nations Office for Disaster Risk Reduction began with the quote, 'We don't know what we don't know. This means that unless you actually try to find out things, you don't know what's out there. With the theme of strengthening the understanding of PDaLo information management in the region, the Secretariat of the Pacific Community (SPC's) Disaster Reduction Programme facilitated the workshop on 28 and 29 October 2013. Regional participants agreed that government services were information-based so if information was constantly requested then it was quite reasonable to expect that there should be adequate resources and capacities made available to facilitate information management

Streeter, Megan. SOPAC Division SPC
[Suva] : SPC 2013 2 p.
Download: http://www.pacificdisaster.net/pdnadmin/data/original/SPC_2013_PDaLo_opening.pdf
HTML Link: http://www.pacificdisaster.net/pdnadmin/data/documents/12125.html

12280

Pacific Damage and Loss (PDaLo) : factsheet

The Pacific Damage and Loss (PDaLo) factsheet provides an overview from the new information system which holds information on hazardous events that have occurred in the Pacific region between 1567 and 2013. The factsheet contains graphics and charts about the volume of data cards, death, affected population, houses destroyed and damaged and economic loss. Tropical cyclones account for the highest proportion of recorded events and 70 per cent of the Pacific region's total loss while earthquakes account for the highest incidents of death and accounting for 33 per cent of total fatalities. Highlights include that 11.8million people in the Pacific have been affected by a disaster and there have been over 19,000 fatalities

Cook, Samantha.   Secretariat of the Pacific Community. (SPC SOPAC Published report ; 181)
Suva : SPC SOPAC Division 2013 [2 p.].
Download: http://www.pacificdisaster.net/pdnadmin/data/original/SPC_SOPAC_2013_PDalo_factsheet.pdf
HTML Link: http://www.pacificdisaster.net/pdnadmin/data/documents/12280.html

12281

Pacific Damage and Loss (PDaLo) Regional disaster impact report

This report provides analysis of past events held in the Pacific Damage and Loss (PDaLo) information system to establish the impacts by hazard that catastrophic events have had on Pacific Island countries. The report covers the regional context, regional hazard profiles, hazard impacts for tropical cyclones, earthquakes and tsunamis, floods, droughts and volcanoes, disaster impacts by sector, growing demand for information on disasters and future considerations

Cook, Samantha.   Secretariat of the Pacific Community. (SPC SOPAC Published report ; 180)
Suva : SPC SOPAC Division 2013 22 p. [28 p.] : col. ill. Ref. : p. 20
Download: http://www.pacificdisaster.net/pdnadmin/data/original/SPC_SOPAC_2013_PDalo_Regionalreport.pdf
HTML Link: http://www.pacificdisaster.net/pdnadmin/data/documents/12281.html

12296

Pacific Damage and Loss (PDaLo) information system : user manual ; analysis and query ; DesConsultar

The Pacific Damage and Loss Analysis Module purpose is to facilitate the understanding of disasters as a reality ever present in the daily relationship of society (and its economic, environmental, technological and human development) and nature. The functionality provides spatial patterns by means of thematic maps showing the occurrence and or effects over a region, and charts comparing the impact in different regions along time. Temporal patterns and trends with the aid of various types of time oriented charts, including seasonal and multi-period occasional charts

Cook, Samantha. May, Jutta. Secretariat of the Pacific Community. (SPC SOPAC Published report ; 178)
Suva : SPC SOPAC Division 2013 33 p. [40 p.] : col. ill.
Download: http://www.pacificdisaster.net/pdnadmin/data/original/SPC_SOPAC_2013_PDalo_Usermanual.pdf
HTML Link: http://www.pacificdisaster.net/pdnadmin/data/documents/12296.html

Additional Sources

9185

Risk Knowledge Fundamentals : Guidelines and lessons for establishing and institutionalizing disaster loss databases.

This report documents the experiences of the UNDP Regional Programme on Capacity Building for Sustainable Recovery and Risk Reduction (RP) in implementing disaster loss databases using the DesInventar methodology. The RP has been established in response to the Indian Ocean tsunami of 2004. The DesInventar is based on a relational database structure and a disciplined expert assisted structure for data collection and classification that permits the homogeneous capture, analysis and graphic representation of information on disaster occurrences and losses

United Nations Development Programme Bangkok : UNDP, 2009. iv, 92 p. [100 p.]
Annex I-X : p. 36-92
Download: http://www.pacificdisaster.net/pdnadmin/data/original/UNDP_2009_guidelines_lessons.pdf
HTML   Link: http://www.pacificdisaster.net/pdnadmin/data/documents/9185.html   URL: http://www.gripweb.org/gripweb/sites/default/files/Guidelines%20and%20Lessons%20for%20Estabilising%20and%20Institutionalizing%20Disaster%20Loss%20Databases.pdf

11683

A comparative review of country-level and regional disaster loss and damage databases

This report compares regional and country-level loss and damage databases, analysing their contents, operational characteristics, quality, uses and applications. As UNDP has been a major source of support for loss and damage database implementation at country level, the report includes an overview of UNDP's work and lessons learned as a guide to future UNDP support in this area. The analysis, results and conclusions are further used to suggest areas for improvement in disaster loss and damage accounting generally

United Nations Development Programme [New York] : UNDP, 2013. 41 p. [51 p.] : col. ill.
Annexe 1-2 : p. 42-49. Ref. : p. 41
Download: http://www.pacificdisaster.net/pdnadmin/data/original/UNDP_2013_disaster_loss_and_damage_database.pdf
HTML   Link: http://www.pacificdisaster.net/pdnadmin/data/documents/11683.html   URL: http://www.wmo.int/pages/prog/drr/projects/Thematic/HazardRisk/2013-04-TechWks/Documents/Partners/UNDP/UNDP%20Disaster%20Loss%20and%20Damage%20Database.pdf

11475

1st Information and Knowledge Management for Disaster Risk Reduction (IKM4DRR) Workshop : workshop report ; 20 May 2013. Fourth Session of the Global Platform for Disaster Risk Reduction Geneva, Switzerland

This report summarizes the key discussions, outputs and decisions generated from the first Information and Knowledge Management for Disaster Risk Reduction (IKM4DRR) workshop. It aimed to strengthen the information and knowledge management capacity among national, regional and thematic stakeholders; facilitate knowledge sharing and increase collaboration among professionals and existing projects and portals; strengthen a global IKM4DRR Community and confirm its roles and responsibilities in support of information and knowledge management for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA). The key outputs include an IKM4DRR Framework, its corresponding IKM4DRR Scorecard, and an IKM4DRR Action Plan

International Strategy for Disaster Reduction
Geneva : UNISDR, 2013. iii, 42 p. [46 p.] : col. ill. Annex 1-4 : p. 14-42
Download : http://www.pacificdisaster.net/pdnadmin/data/original/UNISDR_2013_IKM4DRR_Workshop_rprt.pdf
HTML Link : http://www.pacificdisaster.net/pdnadmin/data/documents/11475.html
URL : http://www.preventionweb.net/files/workspace/33381_ikm4drrworkshopreportv131jul13.pdf

12001

Information and knowledge management for disaster risk reduction (IKM4DRR) framework and scorecard ; May 2013

Information and Knowledge Management for Disaster Risk Reduction (IKM4DRR) enables and sustains informed decision making for managing disaster risk and is essential for coordinated action. The purpose of an IKM4DRR Framework is to guide the initiation, creation and sustainability of information and knowledge management for DRR at all levels in order to address the aforementioned issues, and improve the impact, efficiency and interoperability of IKM for DRR efforts. This framework was developed by the IKM4DRR community, and validated in the first IKM4DRR workshop, Global Platform for Disaster Risk Reduction, 20 May 2013

International Strategy for Disaster Reduction
Geneva : UNISDR, 2013. 23 p. [24 p.]
Download : http://www.pacificdisaster.net/pdnadmin/data/original/UNISDR_2013_IKM4DRR_Framework_and_Scorecard.pdf
HTML Link : http://www.pacificdisaster.net/pdnadmin/data/documents/12001.html