

Session III:

Disaster Risk Management

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Outline

- Summary of disasters and damage and loss in the Pacific and some ICT opportunities
 - Use of online data to inform Government decision making – PDaLo.
 - GIS and Hazard mapping in Pacific
 - Making information accessible to general public, local Govt. and private sector to inform decision making and planning.
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Pacific Disasters

Pacific is one of the most at risk regions in the world.

Between the years 1567 and 2013 (*but primarily from 1970*):

- 386 Tropical Cyclones
- 229 Tsunamis
- 119 Earthquakes
- 112 Floods

Which have resulted in over:

- US\$3.3 Billion economic cost (inflation not accounted for)
- 19,527 fatalities
- Approx. 11.8 million people affected
- Over 187,000 homes damaged or destroyed

(Source: Pacific Damage and Loss Database, 2013)



ICT Opportunities & DRM

- Open database
- Data “cloud” backup
- Crowdsourcing
- ICT-based early warning systems
- Earth Observations
- Ground-based observation networks
- GIS (global, regional, national, local)
- Assistive devices and accessible information (including for persons with disabilities)

➔ *Continuity planning (business, information, energy, ...)*

Pacific Damage and Loss (PDaLo) Online Database

DesInventar in the Pacific



Extensive Database

Time series 1567-2014

1'167 Records

257 Education centres

22 states and territories affected

19'411 deaths

11'481'849 affected

103'533 Houses damaged

74'856 Houses destroyed

31 Hospitals affected 145 records referenced with GLIDE M

81 customized indicators

16 customized hazards



22 Countries and territories from the Pacific Region

East Timor

Marshall Islands

French Polynesia

Papua New Guinea

Vanuatu

New Caledonia

Niue

American Samoa

Northern
Mariana Islands

Kiribati

Tonga

Nauru

Solomon Islands

Wallis and Futuna

Guam

Fiji

Federated States
of Micronesia

Tuvalu

Palau

Cook Islands

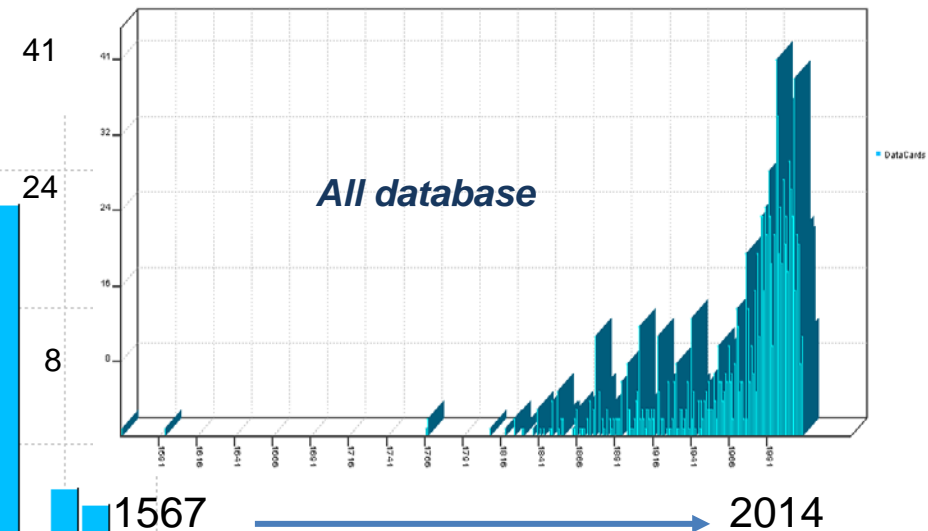
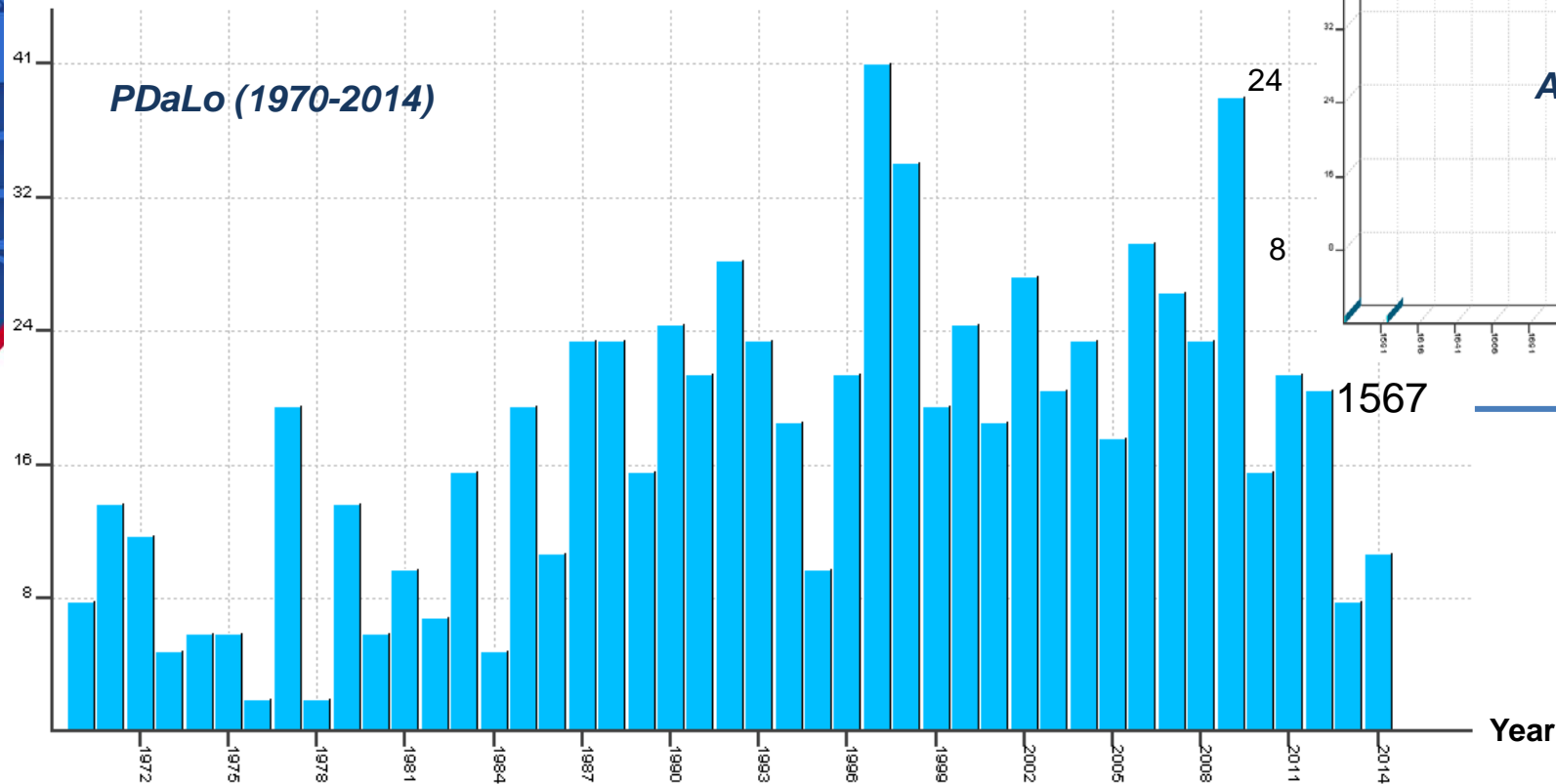
Samoa

Tokelau

Temporal Distribution

No. of records

No. of records



Records going back to the XVI Century. Since 1970, excellent coverage.

1'167 Records



Next steps for PDaLo

- Excellent database with good coverage and well-discussed standards.
 - Synergies with Government bodies, UN Agencies as well as NGOs should continue, so data is shared and entered in a rigorous way.
 - Looking for partners to cover information on disasters in agriculture (damages in crops ha.).
 - More work to be carried out regarding small-scale/slow-onset disasters.
 - Next Workshop in late November – Suva, Fiji.
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Geographical Information Systems (GIS) in all 4 phases of DRM

- Mitigation: mitigation planning, such as land use zoning, based on risk assessment
 - Preparedness: establishing (multi-hazard) early warning systems & identifying demographic needs (e.g. population).
 - Response: pre- and post-disaster images to identify damages
 - Recovery: high-resolution satellite images for identifying changes for recovery
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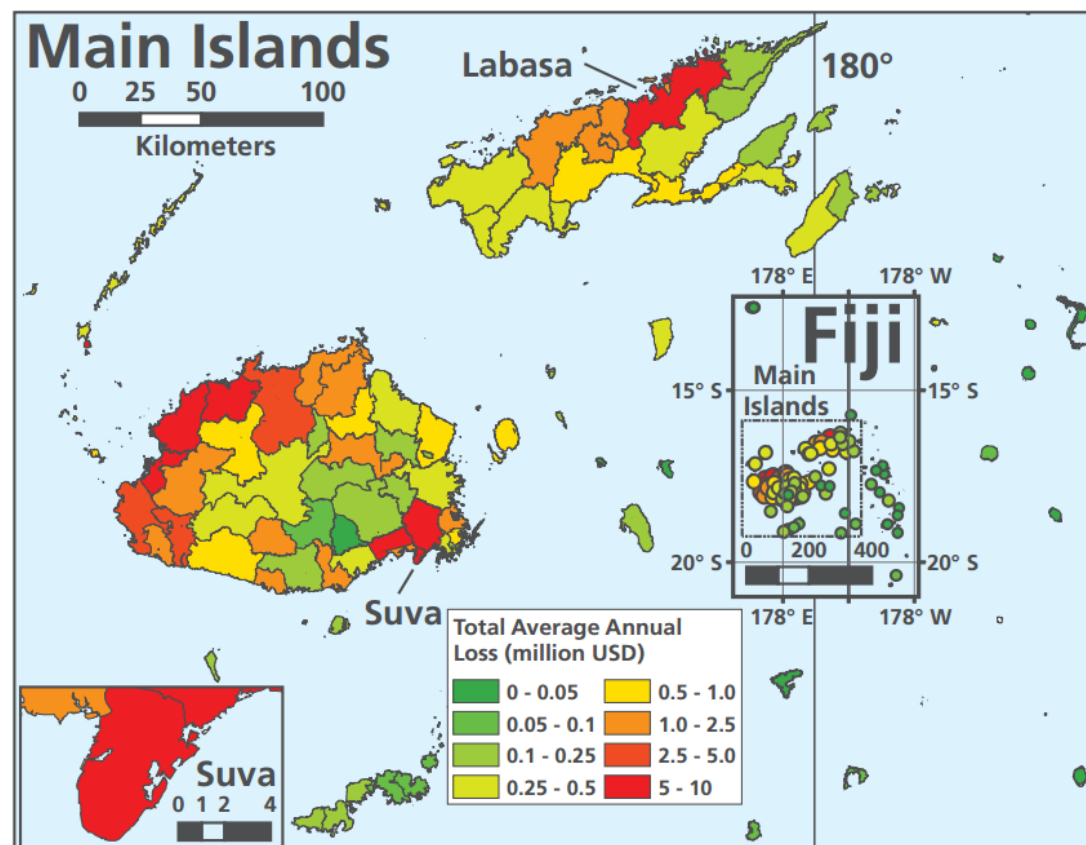
PCRAFI

- Good use of GIS data publically available
- Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) aims to provide the Pacific Island Countries (PICs) with disaster risk modeling and assessment tools.
- The *Pacific Disaster Risk Assessment* project provides 15 countries with disaster risk assessment tools to better understand, model, and assess exposure to natural hazards.

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- <http://pcrafi.sopac.org/>

PCRAFI Example: Average Annual Loss in Fiji

In the next 50 years Fiji has 50% chance of experiencing loss over US\$806 million



Source: PCRAFI 2011

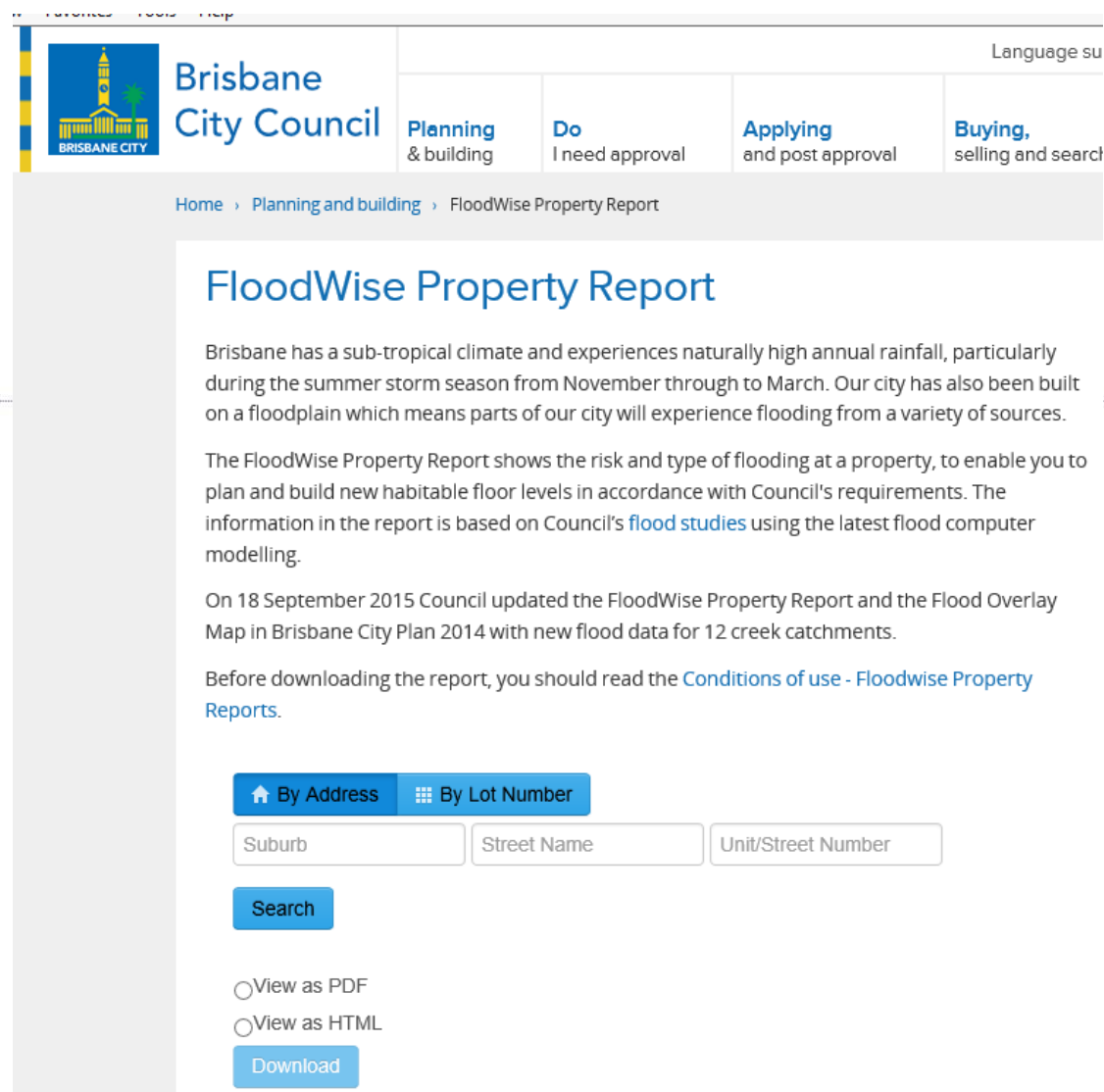


Vanuatu Example

Use of ICT in Early Warning Systems

- Monitoring Stations *send data* to Meteorological service *send message* to Public
- Messages sent through social media (e.g. Face book), SMS, Email, and Government Websites.
- Oceania Regional Seismic Network for earthquake and tsunami warning (South-West Pacific area) – Vanuatu lead but PICs share data, expertise and resources.

Brisbane Example:



The image shows a screenshot of the Brisbane City Council's FloodWise Property Report web application. The header features the Brisbane City Council logo and navigation links: 'Planning & building', 'Do I need approval', 'Applying and post approval', and 'Buying, selling and search'. A breadcrumb trail indicates the path: 'Home > Planning and building > FloodWise Property Report'. The main heading is 'FloodWise Property Report'. The text explains that Brisbane has a sub-tropical climate with high annual rainfall and is built on a floodplain. It states that the FloodWise Property Report shows the risk and type of flooding at a property, enabling users to plan and build new habitable floor levels in accordance with Council's requirements. The information is based on Council's flood studies using the latest flood computer modelling. It notes that on 18 September 2015, Council updated the FloodWise Property Report and the Flood Overlay Map in Brisbane City Plan 2014 with new flood data for 12 creek catchments. Before downloading the report, users are advised to read the 'Conditions of use - Floodwise Property Reports'. The search section includes two tabs: 'By Address' (selected) and 'By Lot Number'. Below the tabs are three input fields: 'Suburb', 'Street Name', and 'Unit/Street Number'. A 'Search' button is positioned below these fields. At the bottom, there are two radio buttons: 'View as PDF' (selected) and 'View as HTML', followed by a 'Download' button.

Language su

Home > Planning and building > FloodWise Property Report

FloodWise Property Report

Brisbane has a sub-tropical climate and experiences naturally high annual rainfall, particularly during the summer storm season from November through to March. Our city has also been built on a floodplain which means parts of our city will experience flooding from a variety of sources.

The FloodWise Property Report shows the risk and type of flooding at a property, to enable you to plan and build new habitable floor levels in accordance with Council's requirements. The information in the report is based on Council's [flood studies](#) using the latest flood computer modelling.

On 18 September 2015 Council updated the FloodWise Property Report and the Flood Overlay Map in Brisbane City Plan 2014 with new flood data for 12 creek catchments.

Before downloading the report, you should read the [Conditions of use - Floodwise Property Reports](#).

☒ By Address ☐ By Lot Number

Suburb Street Name Unit/Street Number

Search

☒ View as PDF ☐ View as HTML

Download

(Source: <http://www.brisbane.qld.gov.au/planning-building/planning-guidelines-tools/online-tools/floodwise-property-report>)



Sample Report Info

FLOOD LEVEL INFORMATION

(Source: <http://www.brisbane.qld.gov.au/planning-building/planning-guidelines-tools/online-tools/floodwise-property-report>)



Summary

- Pacific is a high risk area and *more development = more risk*
 - The use of online data and tools are an effective way of enhancing work in all phases of Disaster Risk Management in the Pacific (*especially informing land use planning*)
 - Data must be kept up to date.
 - Data must be made publically available and useable in a friendly format.
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