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UNDERSTANDING RISK
GLOBAL FORUM 2024

TRADITION • INNOVATION • RESILIENCE

Pacific “Talanoa” Hub: Innovative Tools and Strategies for Resilience



Conversations:

Conversation I. Modernizing Disaster Risk Management Frameworks: From Reactive Emergency Response to Proactive Disaster Risk Management (9.30-10.45)

Conversation II. Bringing Data to Life and Life to Data: DisasterAWARE and the National Disaster Preparedness Baseline Assessment (NDBPA) (11.00-12.15)

Conversation III. Disaster and Climate Risk Financing Strategies: Layering Instruments to Protect Against Future Shocks (13.15-14.15)

Conversation IV. Evidence-based Vulnerability Assessments: Using Risk Information to Prioritize Critical Public Assets (14.30-15.45)

Conversation V. Participatory Planning Workshops: Incorporating Diverse Voices and Traditional Knowledge in Resilience Building (16.00-17.30)



GFDRR
Global Facility for Disaster Reduction and Recovery



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Pacific Talanoa Hub Welcome and Opening

Agenda:

- 9.00-9.05 Welcome and Introduction to the day
- 9.05-9.15 Keynote Address
 - **Mr. Ming Zhang**, Global Director, Urban, Disaster Risk Management, Resilience and Land – World Bank
- 9.15-9.30 Cultural Performance (Tongan Association)

Pacific Talanoa Hub
Understanding Risk 2024

Our Strategy in the Pacific

Innovative tools and strategies in Pacific Island Countries



The Pacific Islands have diverse identities yet common challenges

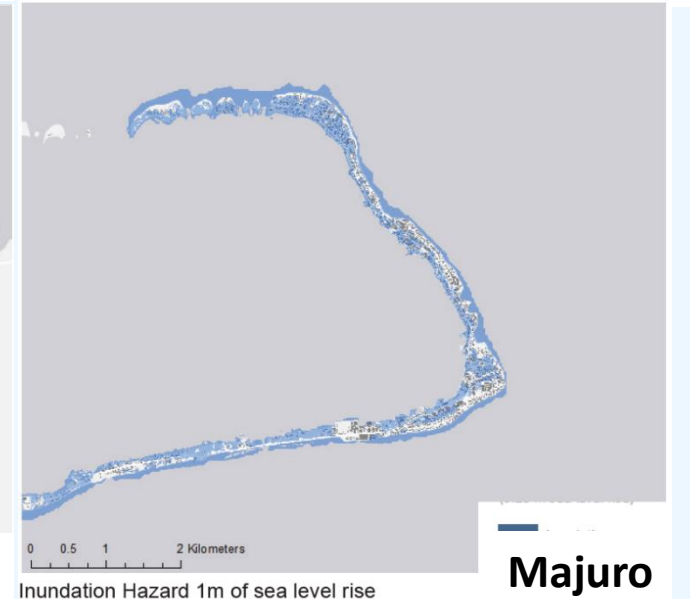
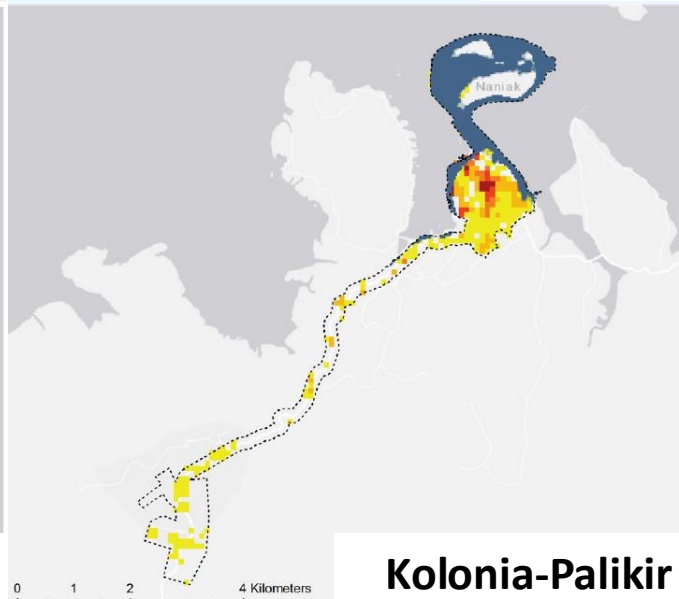
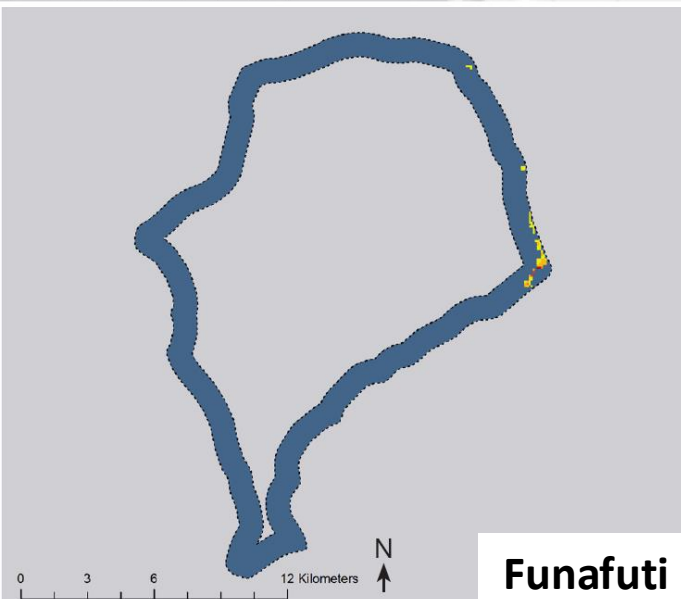
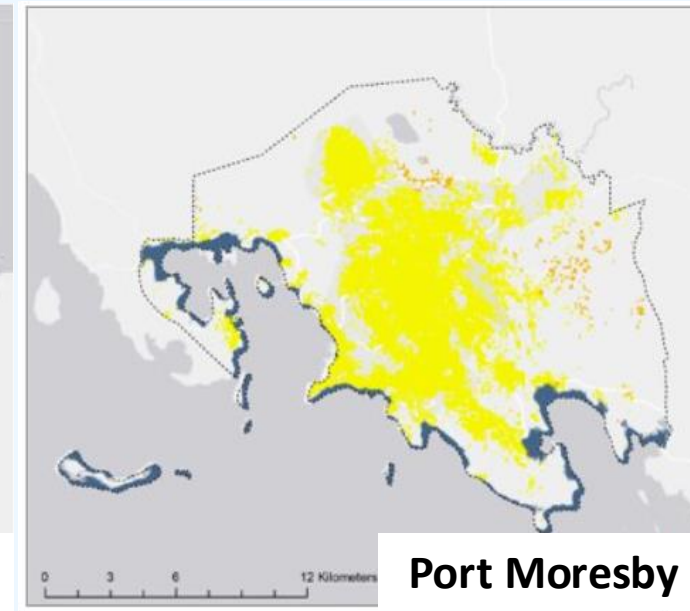
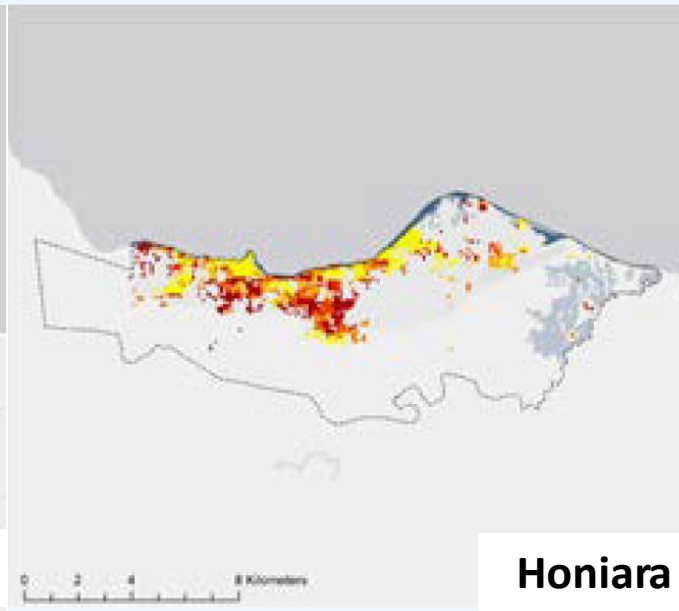
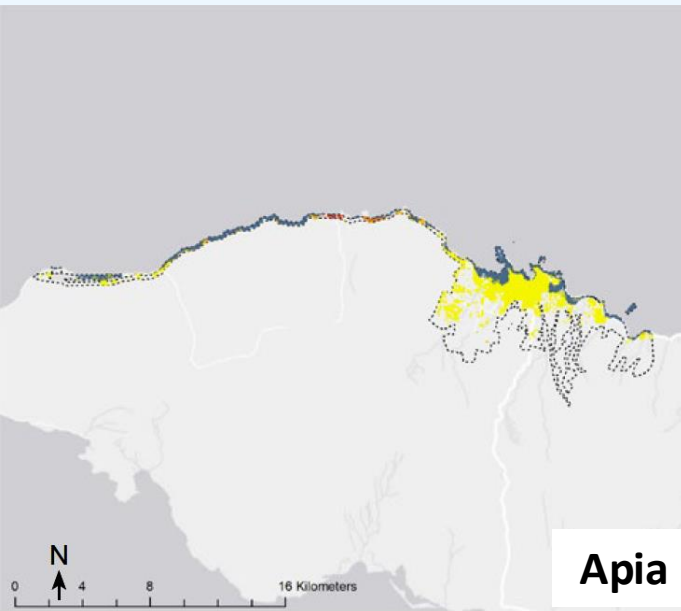


Recognizing these challenges, we work with Pacific Island Countries on their medium to long-term development agenda under 4 pillars

Strategic Pillars – Global Practice for Urban, Disaster Risk Management, Resilience and Land



City scans: assessing disaster/climate risk impacts on urban areas



Shared Socio-economic Pathway (SSP) 5-8.5, 10% annual chance flood given projected sea level rise

Median Flood Projection
Year

- 2020
- 2050
- 2100

Population Density

Number of persons per 10,000 m²

- 0– 80
- 80–150
- 150–230
- 230–310
- 310–383

Inundation Hazard 1m of sea level rise

Vulnerability assessments: quantifying disaster risk for investment planning in risk reduction in Tonga

EXPOSURE



145 schools
1,034 buildings
US\$ 265M replacement value

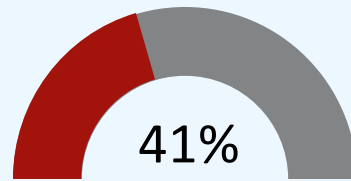


2 in 3 buildings not disaster ready



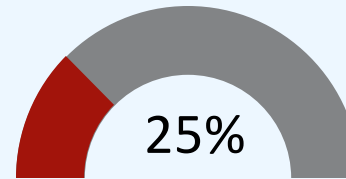
US\$ 96M to enhance safety and resilience of all 145 schools for 26,700 students

VULNERABILITY



Buildings with **high fragility** against earthquakes

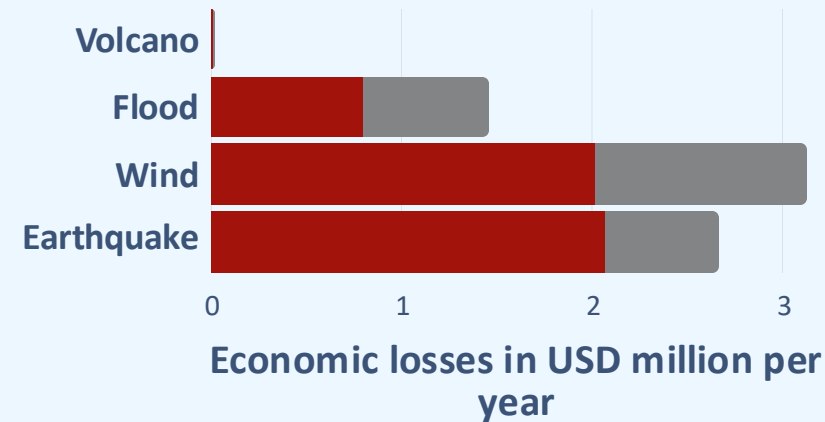
Buildings with **at least one deficiency** in roofs



Elevated chances of **losses from high-wind events**



RISK



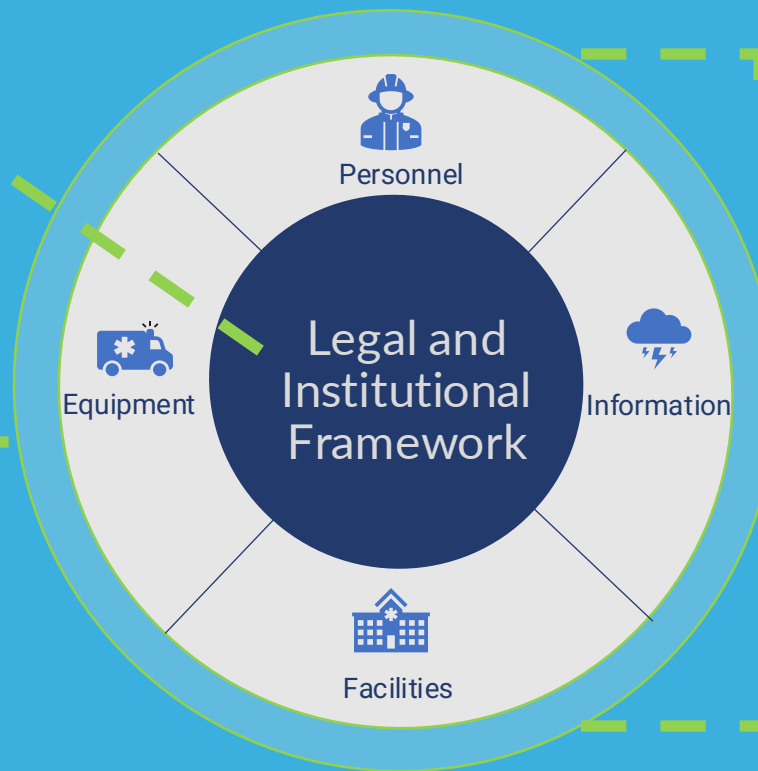
Cost of damage repairs

Economic loss of returns to education from disruption

Ready to Respond diagnostic: benchmarking emergency preparedness and response systems

Clear understanding of all stakeholders' roles and their financing is crucial during emergency response and planning

Properly acquiring, using, and maintaining preparedness equipment ensures effective operations



A skilled, experienced workforce is the most valuable resource in disaster risk management

Collecting, analyzing, and swiftly sharing information enhances decision-making before and during emergencies

Emergency preparedness and response coordination requires strong, efficient facilities

Contingent financing: providing flexible and rapidly disbursing funds for post-disaster response and recovery



Supports country systems:
GoRMI implements its development program/strategy

The World Bank (and other partners support **key policy/institutional actions**, per country program

Key results from 'Prior Actions' are used to monitor and evaluate impact.
Results aligned with government programs

Preparation or existence of a DRM program (and health systems*)

Adequate macroeconomic framework (*assessed at approval but NOT at Cat DDO drawdown*)

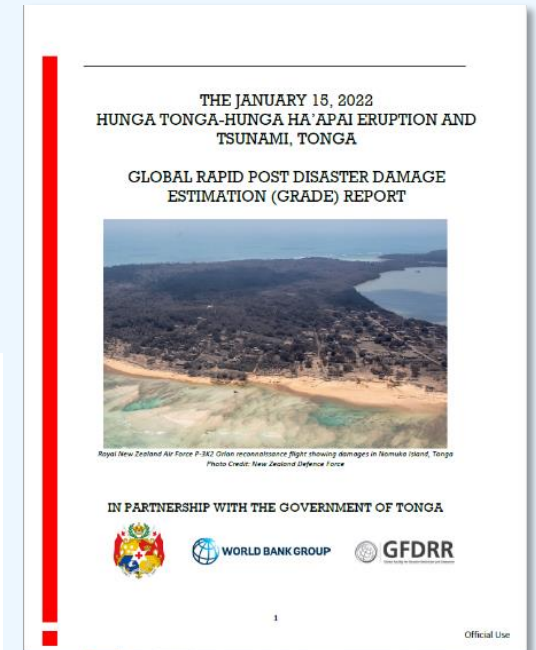
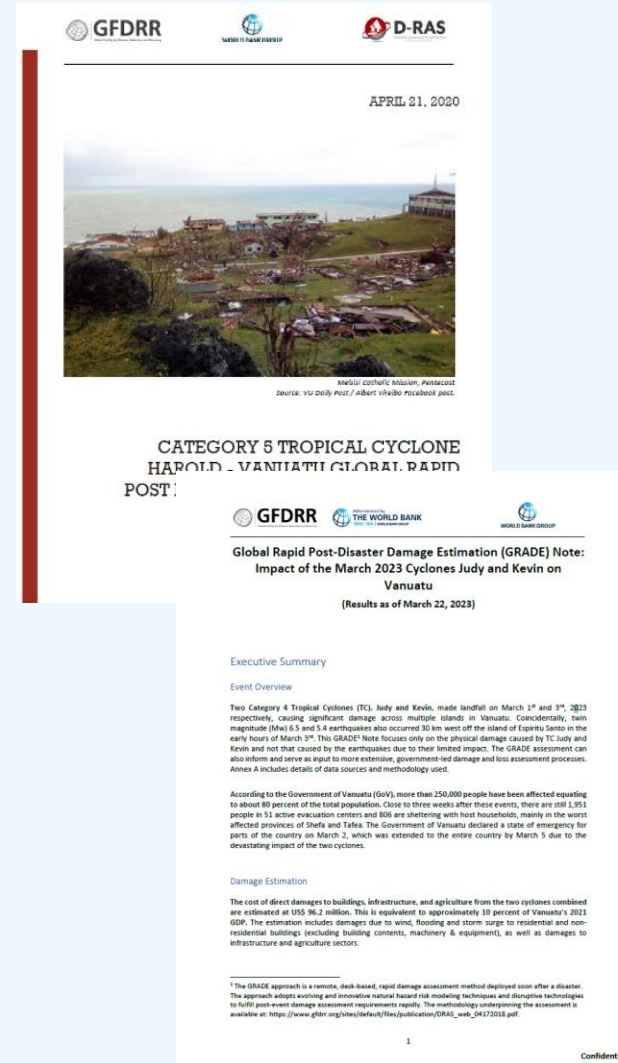
Assessment of fiduciary systems and safeguards aspects

** if the Cat DDO drawdown trigger will include public health emergencies*

GRADE assessments: innovative tool that uses satellite imagery, social media analytics, and global datasets to assess disasters

Global Rapid Post-Disaster Damage Estimation (GRADE) assessments

- Vanuatu Cyclone Judy and Kevin (2023)
- **Tonga Volcanic Eruption and Tsunami (2022)**
 - PREP Tonga Additional Financing (USD5m)
 - Tonga Schools Additional Financing (USD10m)
 - Tonga DPO2 Supplemental Financing (USD20m)
- Fiji TC Yasa GRADE (2020)
- Vanuatu TC-Harold (2020) GRADE



Thank You

Ming Zhang

**Global Director for Urban,
Disaster Risk Management,
Resilience and Land
mzhang1@worldbank.org**





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Conversation I Modernizing Disaster Risk Management Frameworks: from Reactive Emergency Response to Proactive Disaster Risk Management



Speakers:

Mr. Robert Isidore, Director, National Disaster Management Office, **RMI**

Mr. Mafua i-Vai'utukakau Maka, Director, National Disaster Risk Management Office, **Tonga**

Ms. Fetala'i Gagaeolo, Principal Officer, Disaster Management Office, **Samoa**

Mr. Jonathon Tafiariki, Director, National Disaster Management Office, **Solomon Islands**

Discussants:

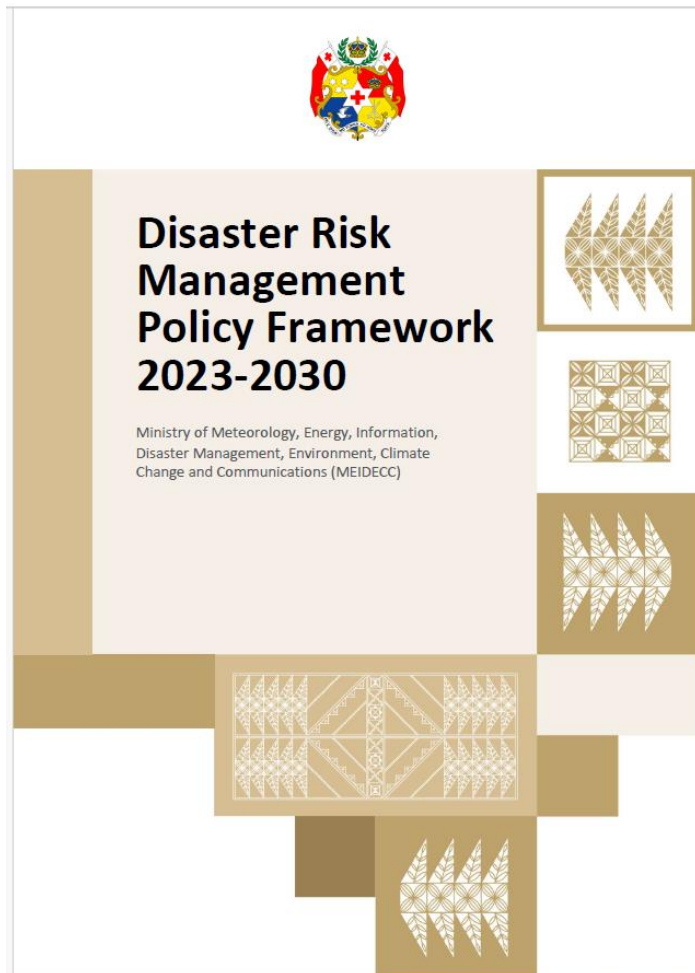
Mr. Charles Pritchard, Assistance Chief Executive Officer, ICT Division, **Samoa**

Mr. Gordon Cornelios, Program Manager and Public Assistant, Department Environment, Climate Change and Emergency Management, **FSM**



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Conversation I

Modernizing Disaster Risk Management Frameworks: from Reactive Emergency Response to Proactive Disaster Risk Management

Agenda:

- 9.30-9.40 Opening
- 9.40-10.20 Panel Discussion
 - **Mr. Isidore Robert**, RMI
 - **Mr. Mafua-'i-Vai'utukakau Maka**, Tonga
 - **Mr. Fetalai Gagaeolo**, Samoa
 - **Mr. Jonathon Tafiariki**, Solomon Islands
- 10.20-10.35 Plenary Discussion
- 10.35-10.45 Discussants + Closing
 - **Mr. Charles Pritchard**, Samoa & **Mr. Gordon Cornelios**, FSM

Solomon Islands

Population (2019 Census)

720,956



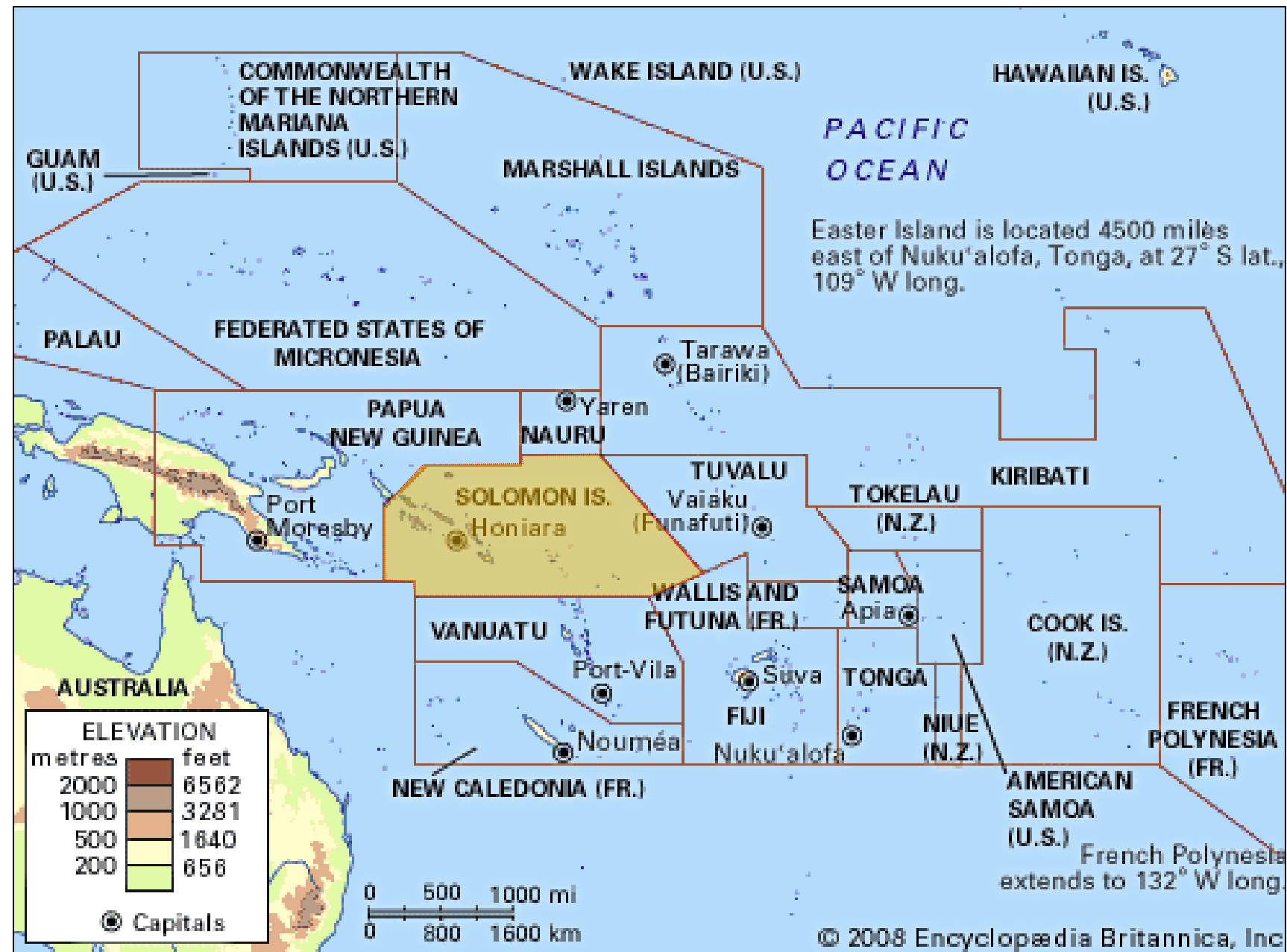
Coastal Population

≈ **80%**

Largely Subsistence

89 % Agriculture

60% Fisheries

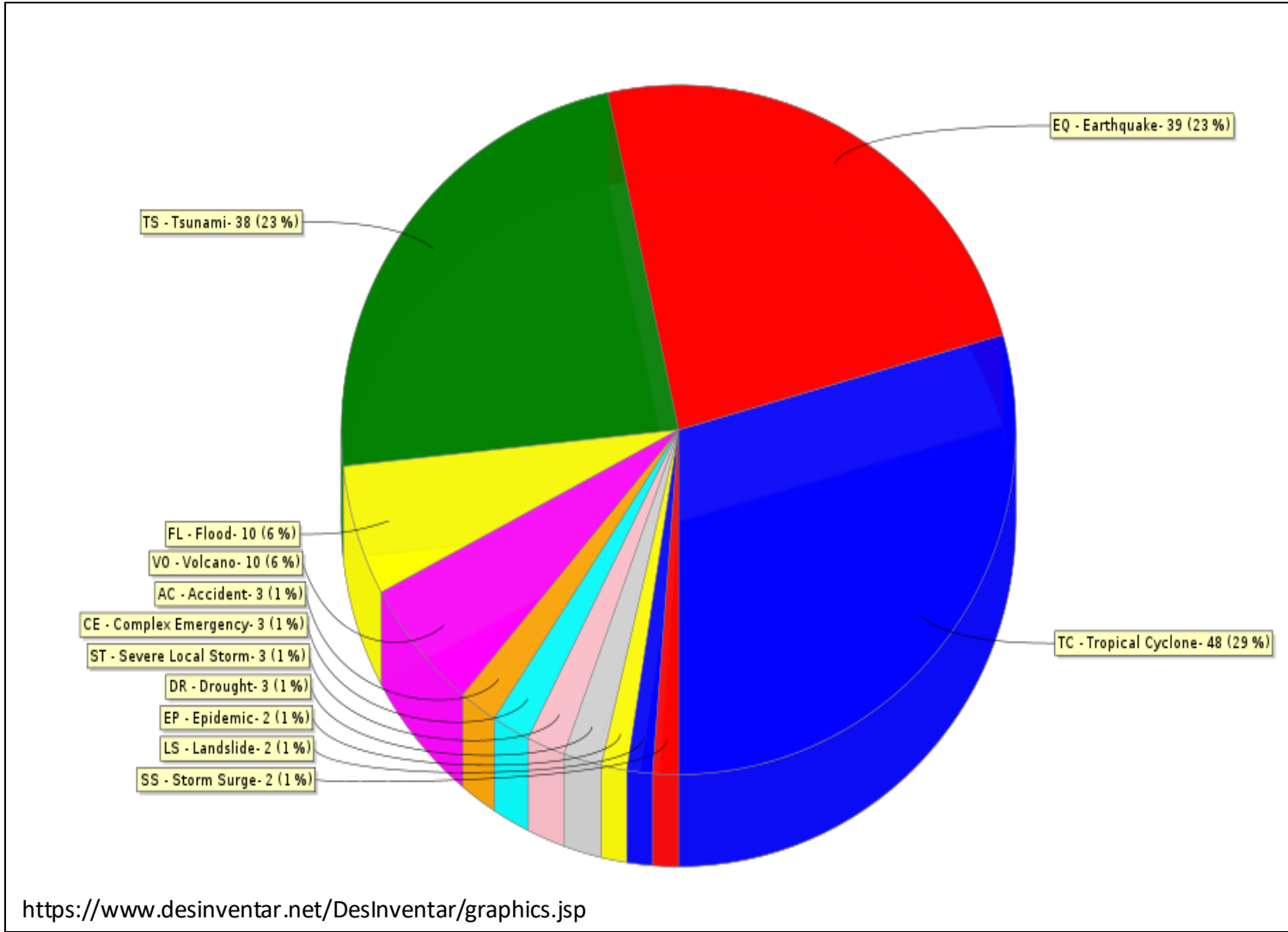


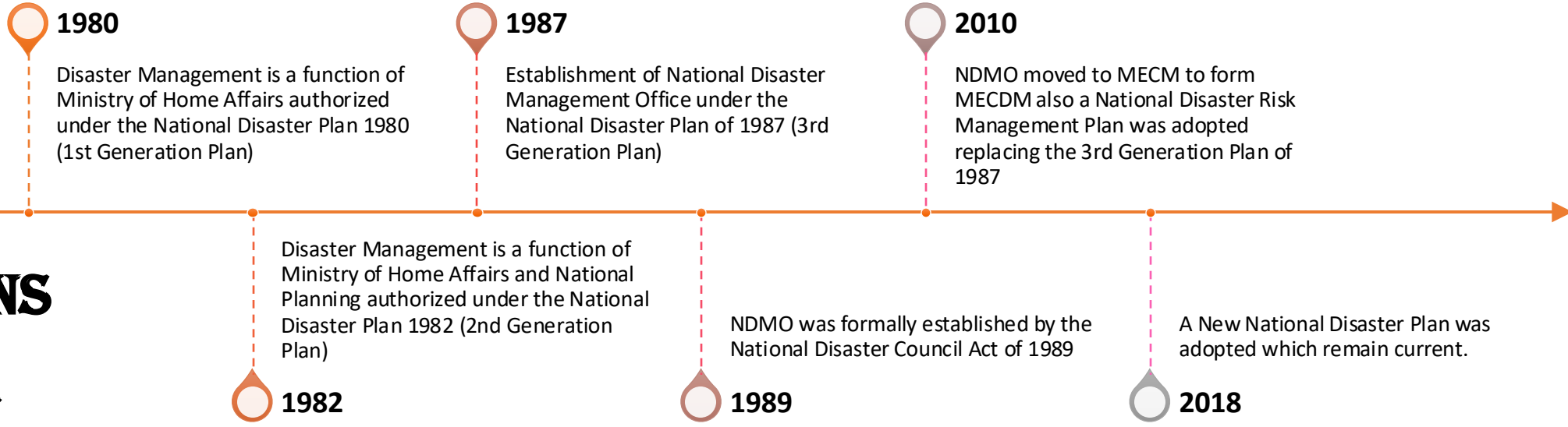
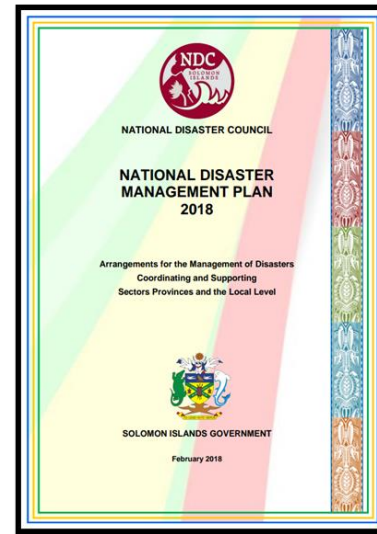
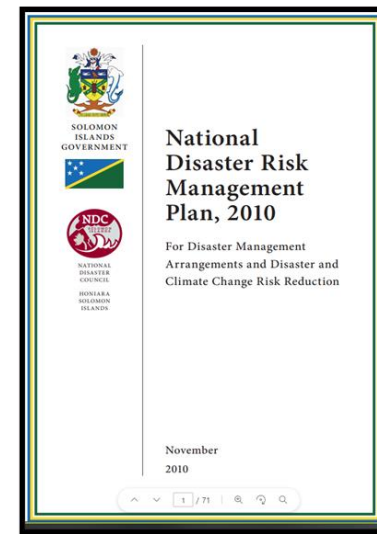
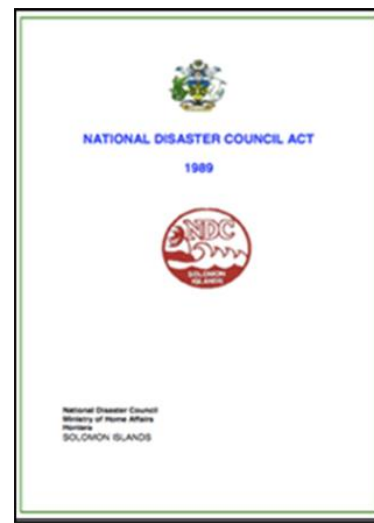
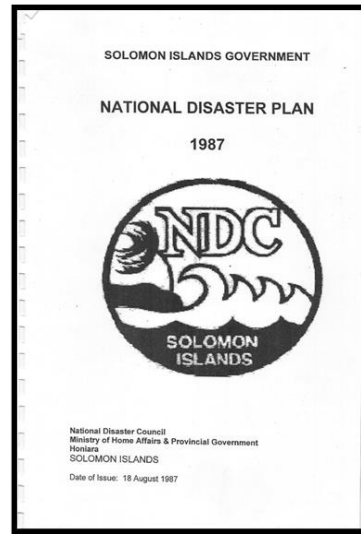
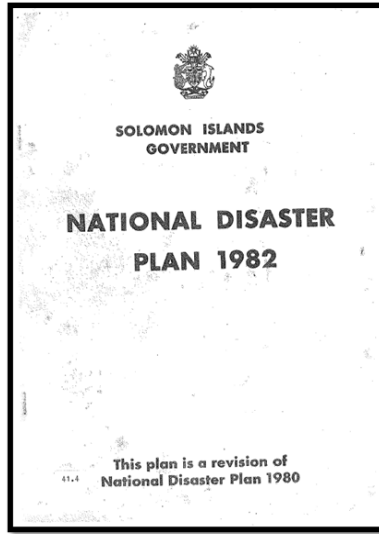
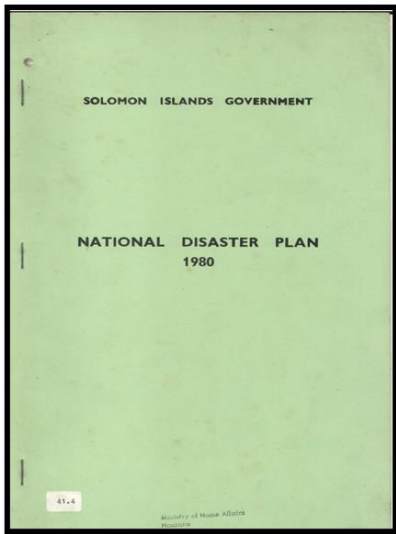
Solomon Islands

**Projected Average Annual Loss (AAL)
For Earthquake & Tropical Cyclone**

5% of GDP

Disaster Events Records since 1568 - 2022





5 PLANS

1 LAW

History of Disaster Management in Solomon Islands

Solomon Islands

KEY GUIDING POLICIES

Current

- National Disaster Council Act 1989
- National Development Strategy 2016 - 2035
- National Disaster Management Plan 2018
- National Climate Change Policy 2022 – 2032

In the Development Process

- National Building Code
- National Disaster Risk Financing Strategy
- Review of Provincial government's performance-based grants mechanism
- Risk Resilience Development Framework (In discussion Phase)

Solomon Islands

KEY LESSONS FOR EFFECTIVE DISASTER MANAGEMENT & RISK RESILIENCE (CCA + DRR)

ADVOCACY, AWARENESS (EDUCATION IS KEY)



Leadership

Localization

Supporting Self Help

Federated State of Micronesia (FSM)

The Federated States of Micronesia is a country with an area of 701.9 KM spread across the western Pacific Ocean comprising more than 600 islands. Micronesia is made up of 4 island states: Pohnpei, Yap, Chuuk and Kosrae With the population of 114,164 people.

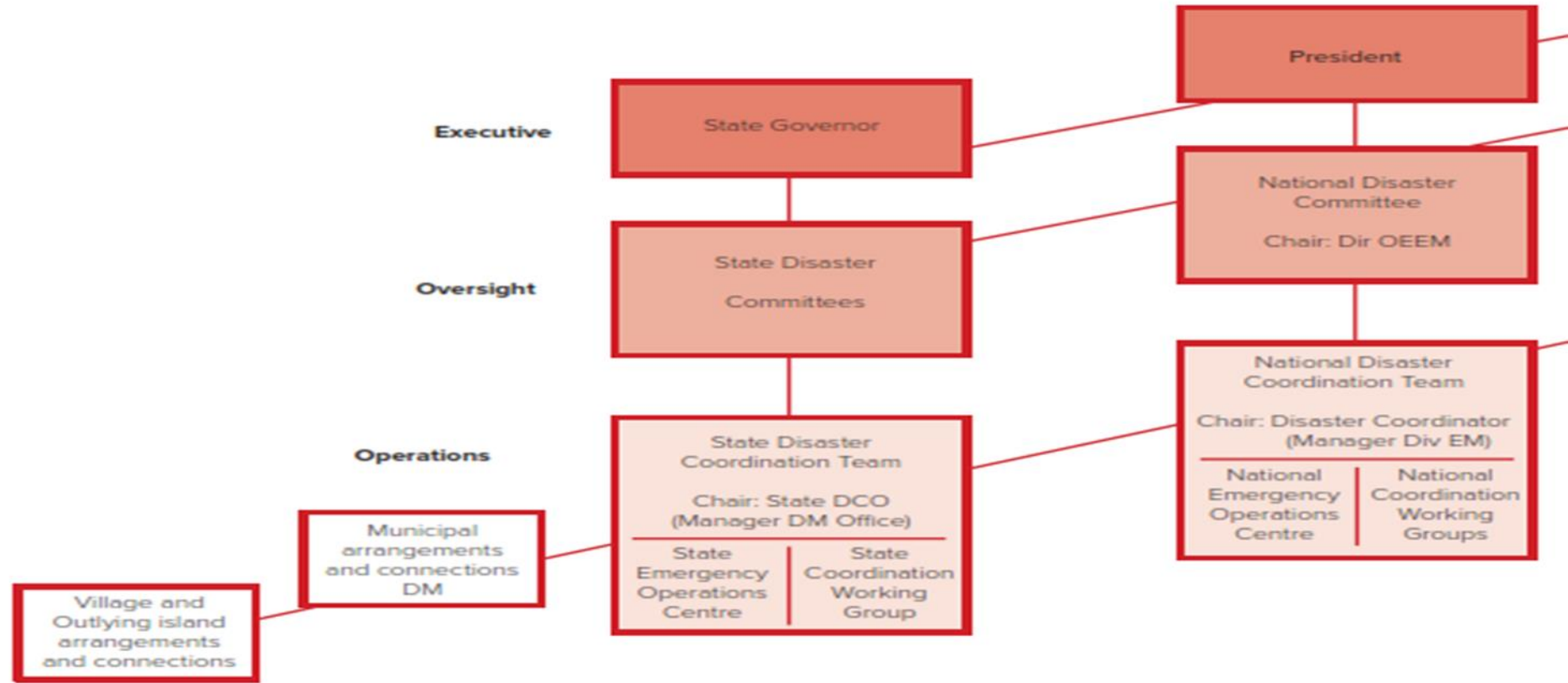


FEDERATED STATES OF MICRONESIA NATIONAL DISASTER MANAGEMENT PLAN

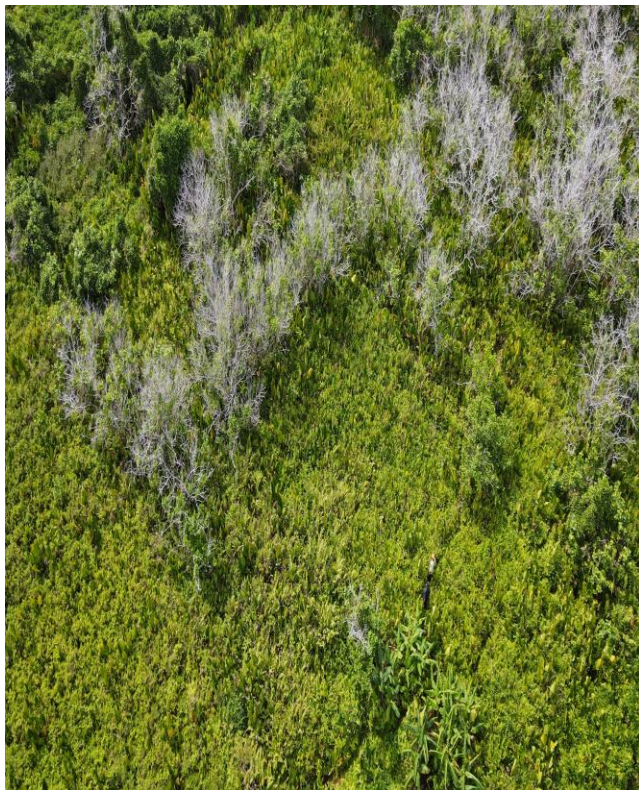
This plan provides for the establishment of national institutional arrangements for the Federated States of Micronesia (FSM) government for preparing and responding to emergency and disaster events within the country.

It includes arrangements for preparedness, mitigation, monitoring for potential events and response at the national level to manage national level events and support state level events. It also outlines arrangements to guide state disaster management plans and their connection to the national level arrangements. It includes provisions for accessing international support.

Disaster Management System



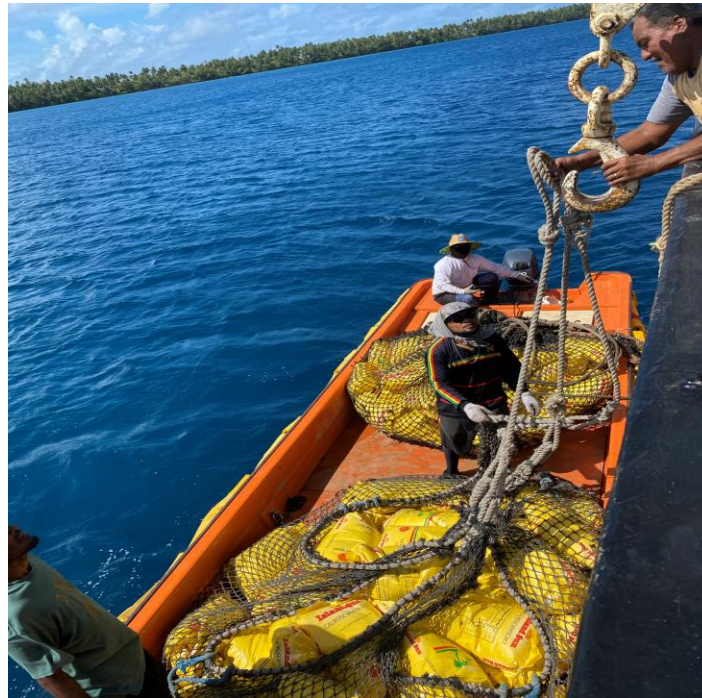
Assessment



Response



Response





Morning Tea Break

Agenda:

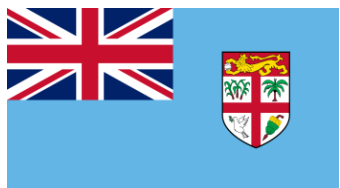
- 10.45-11.00 Cultural Performance (Tongan Association) – singing



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Conversation II

Bringing Data to Life and
Life to Data:
DisasterAWARE and the
National Disaster
Preparedness Baseline
Assessment (NDBPA)

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Speakers:

Ms. Judith Giblin, Ocean and Coastal Risk Data Analyst, **SPC**

Mr. Mohammad Fadli, Disaster Services Specialist, **ASEAN AHA Centre**

Mr. Kevin Madaya, Senior Software Engineer, **PDC Global**

Ms. Ruci Kurucake, Senior Policy Office, National Disaster Management Office, **Fiji**



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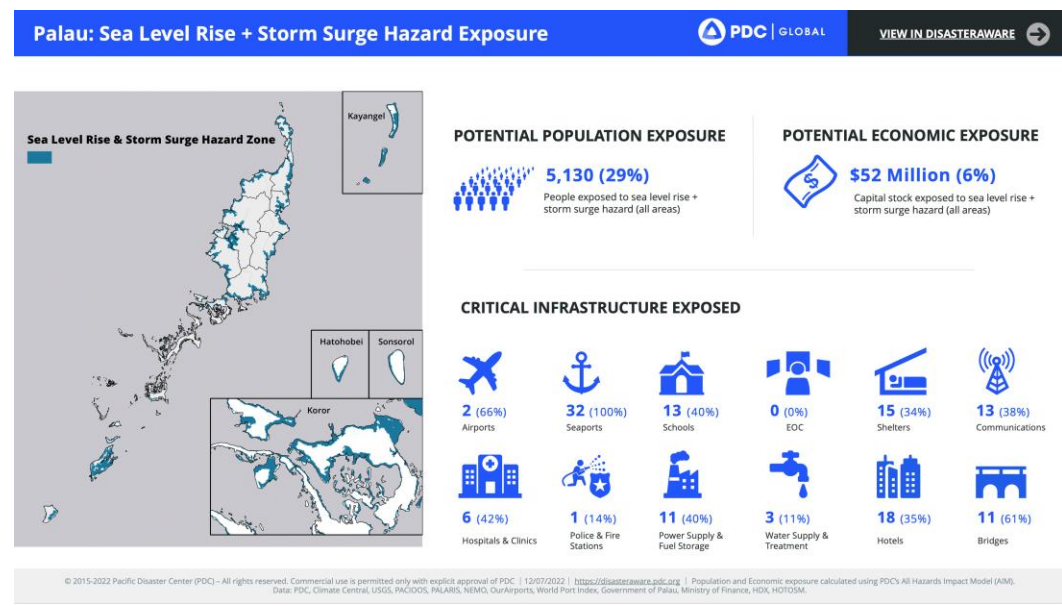


Conversation II

Bringing Data to Life and Life to Data: DisasterAWARE and the National Disaster Preparedness Baseline Assessment (NDBPA)

Agenda:

- 11.00-11.10 Opening
- 11.10-11.25 Interactive Questions
- 11.24-11.45 Panel Discussion
 - Ms. Judith Giblin, SPC
 - Mr. Mohammad Fadli, ASEAN AHA Centre
 - Mr. Kevin Madaya, Pacific Disaster Center
 - Ms. Ruci Kurucake, Fiji
- 11.45-12.10 Questions
- 12.10-12.15 Closing





Bringing Data to Life

Bringing Data to Life

Transforming data into engaging, understandable, and actionable insights that can effectively inform decision-making and drive meaningful actions.

Bringing Life to Data

Ensuring data are not stagnant. Allowing data to be interesting and truly representative.



**Your
Thoughts on
Data**

Mentimeter

Panelist Discussion

Using an example from your country/region please provide how you are leveraging data to support risk-informed decision making.

What is the most important consideration when using data for risk-informed decision making?

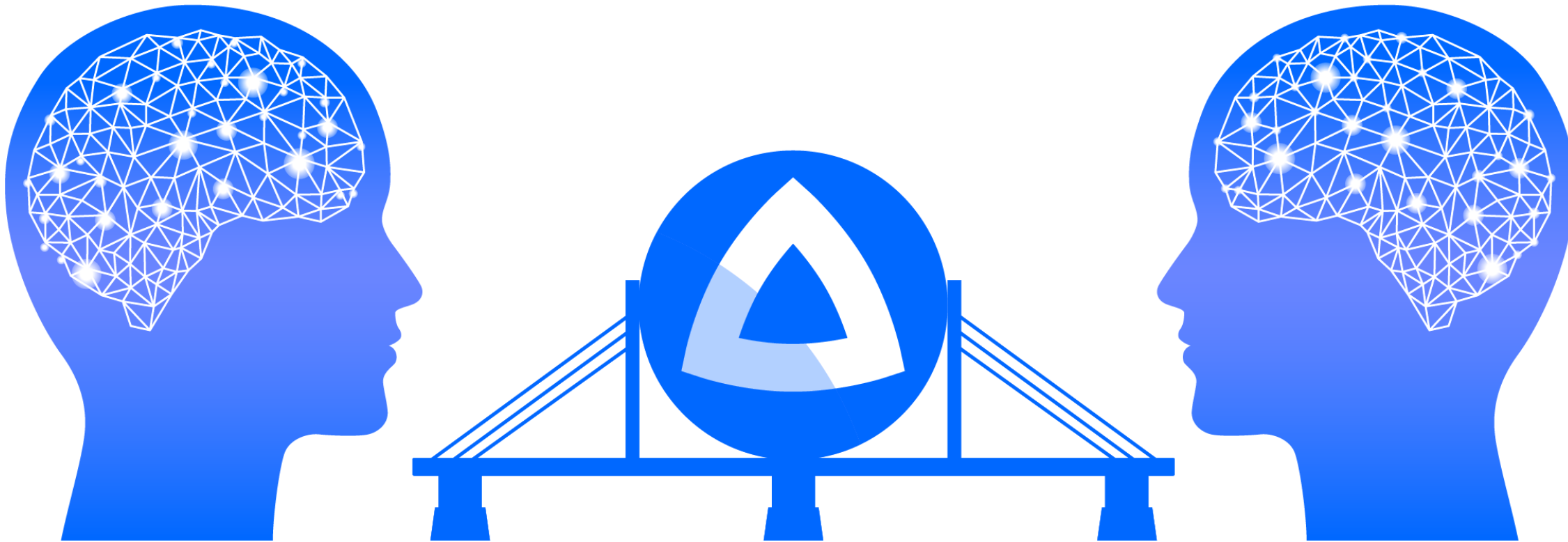
Examples from our Experience at PDC

PDC BRIDGES THE GAP

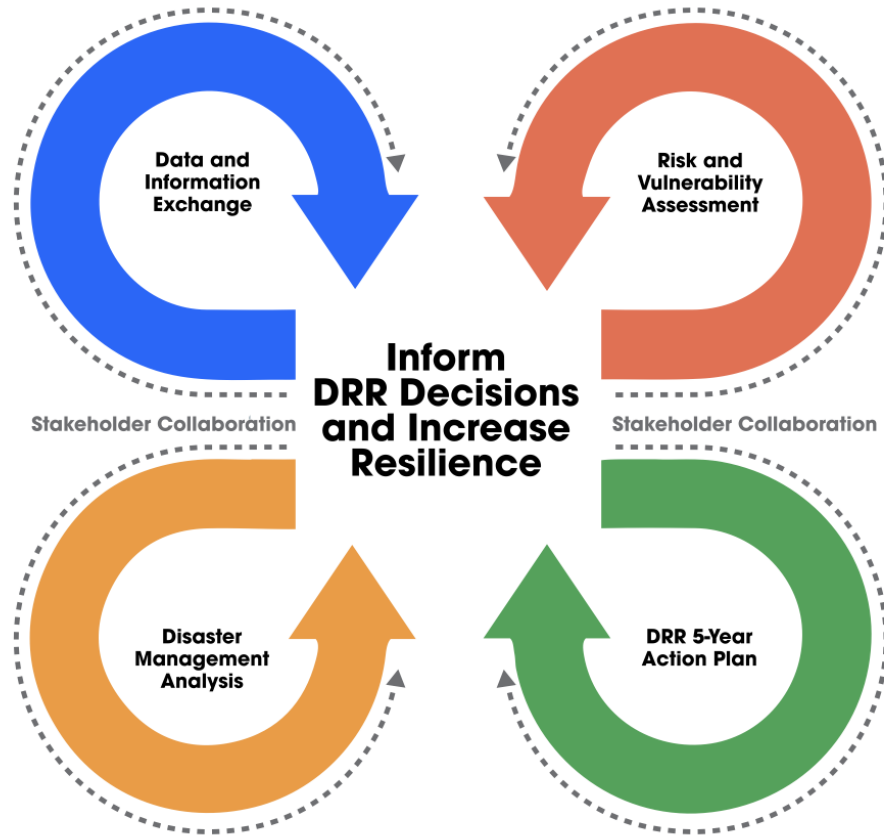
BETWEEN THE SCIENTIFIC COMMUNITY AND DECISION MAKERS

Scientific Community

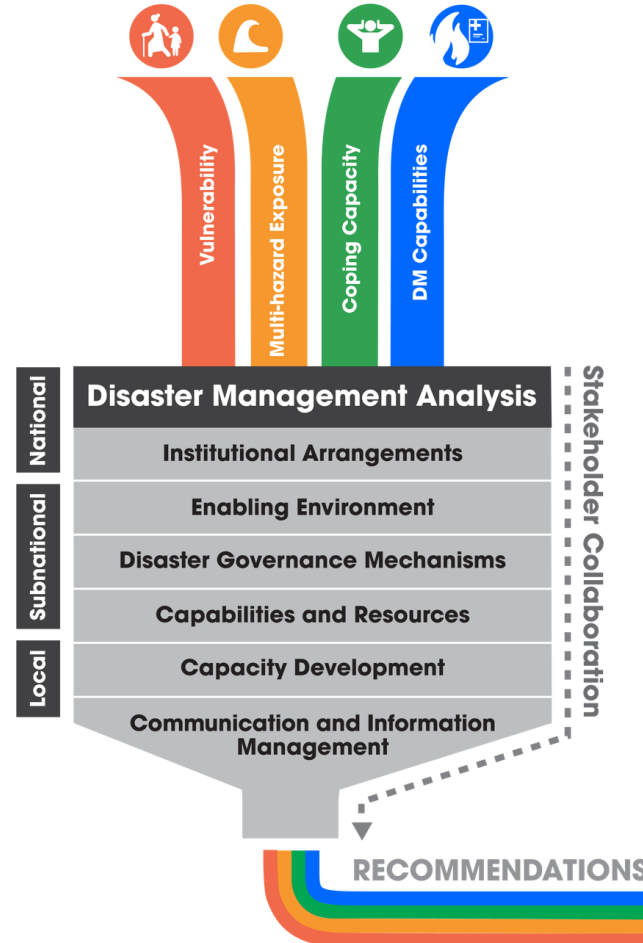
Decision Makers



NATIONAL BASELINE ASSESSMENT

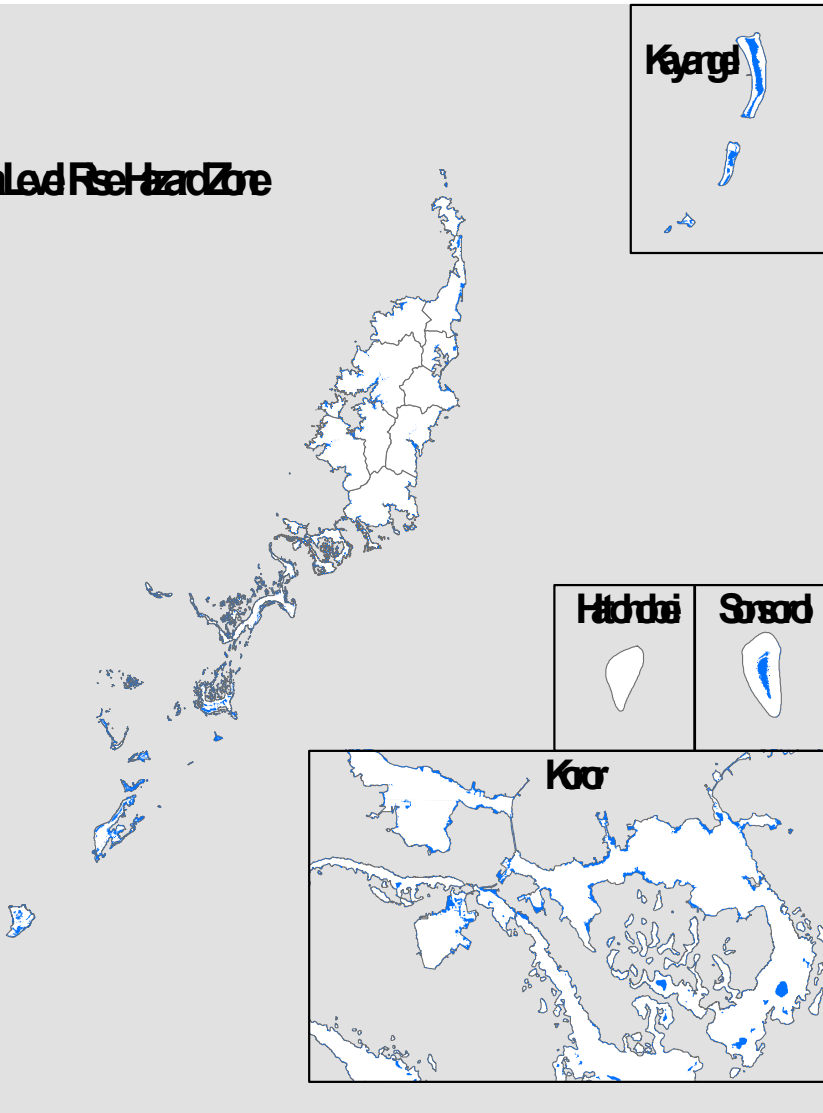


RISK AND VULNERABILITY RESULTS





Sea Level Rise Hazard Zone



POTENTIAL POPULATION EXPOSURE



1 120 (6%)

People exposed to sea level rise hazard (all areas)

POTENTIAL ECONOMIC EXPOSURE



\$44.1 Million (6%)

Capital stock exposed to sea level rise hazard (all areas)

CRITICAL INFRASTRUCTURE EXPOSED



0 (0%)
Airports



32 (100%)
Seaports, Harbors, and Marinas



4 (4%)
Schools and Classrooms



0 (0%)
EOC



8 (18%)
Shelters



1 (20%)
Hospitals & Clinics



1 (14%)
Police & Fire Stations



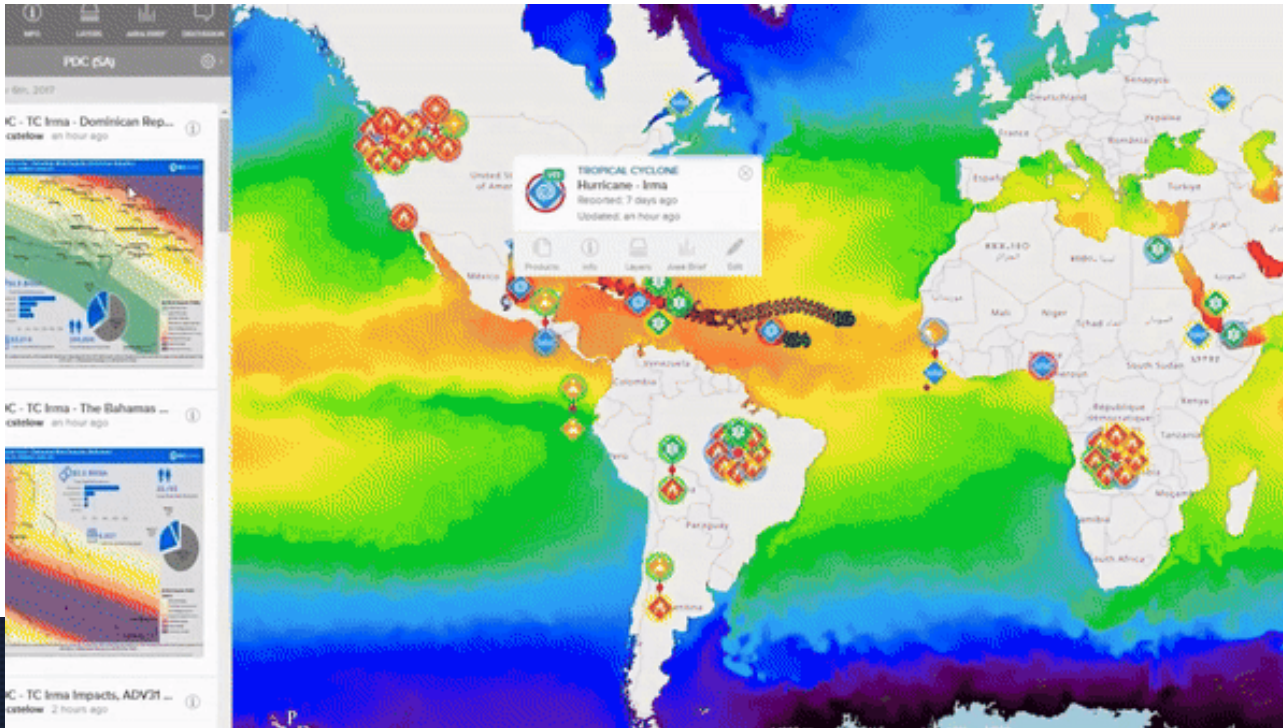
9 (42%)
Power Supply & Fuel Storage



1 (3%)
Water Supply & Treatment



44 (28%)
Hotels and Resorts



DisasterAWARE is a risk intelligence platform that serves national governments, civil protection agencies, and nongovernmental organizations around the globe. It offers the most powerful and reliable early warning, multi-hazard monitoring, and decision support tools to aid effective decision making. See below for more about our unmatched capabilities including:

- Smart alerting and asset tracking
- Quick impact and needs assessments
- 6500+ data layers
- Shared situational awareness tools



**Event Brief Quick
Impact Analysis**



Asset Tracking



Enhanced SmartAlert



Media Hot Spots

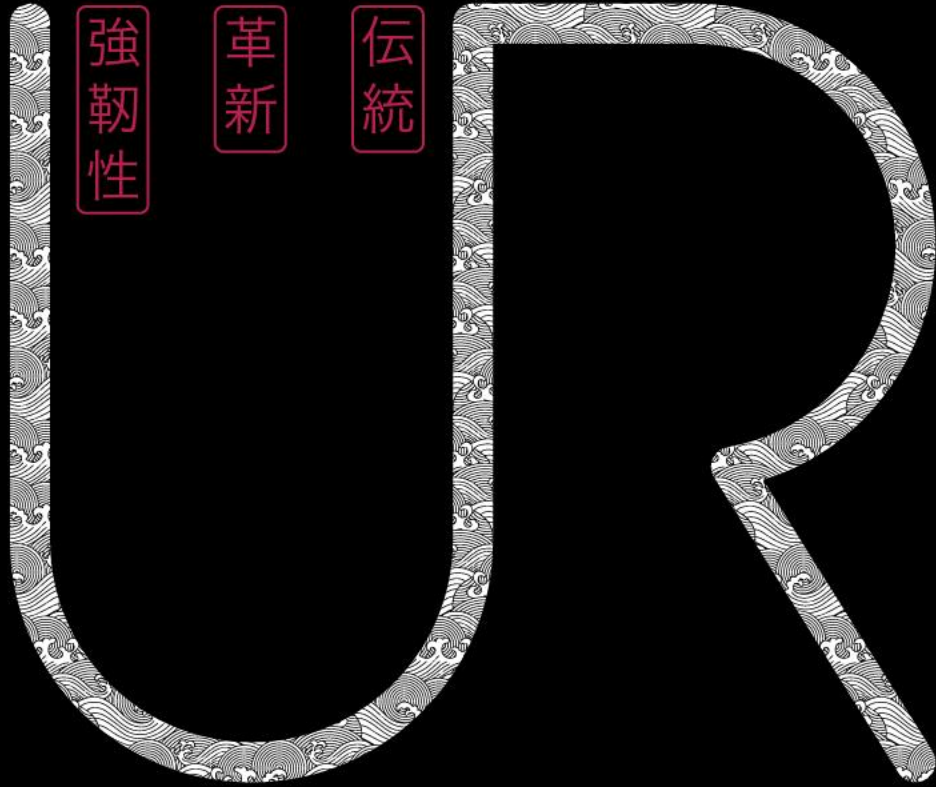


Custom Map Printing



**Map Service
Integration**

One Word



Thank you !

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Lunch Break

Agenda:

- 12.15-13.15 Lunch break



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Conversation III Disaster and Climate Risk Financing Strategies: Layering Instruments to Protect Against Future Shocks

Speakers:

Mr. Fa'avae Mulitalo, Senior Officer, Ministry of Finance, **Samoa**

Ms. Malie Tarwillin, Assistant Secretary, Ministry of Finance, Banking and Postal Services, **Republic of the Marshall Islands**

Ms. Kayleen Fanega, Principal Officer, Climate Finance and Resilience Office, **Solomon Islands**

Mr. Tony Kaltong, Expenditure Analyst, Ministry of Finance and Economic Management (MFEM), **Vanuatu**

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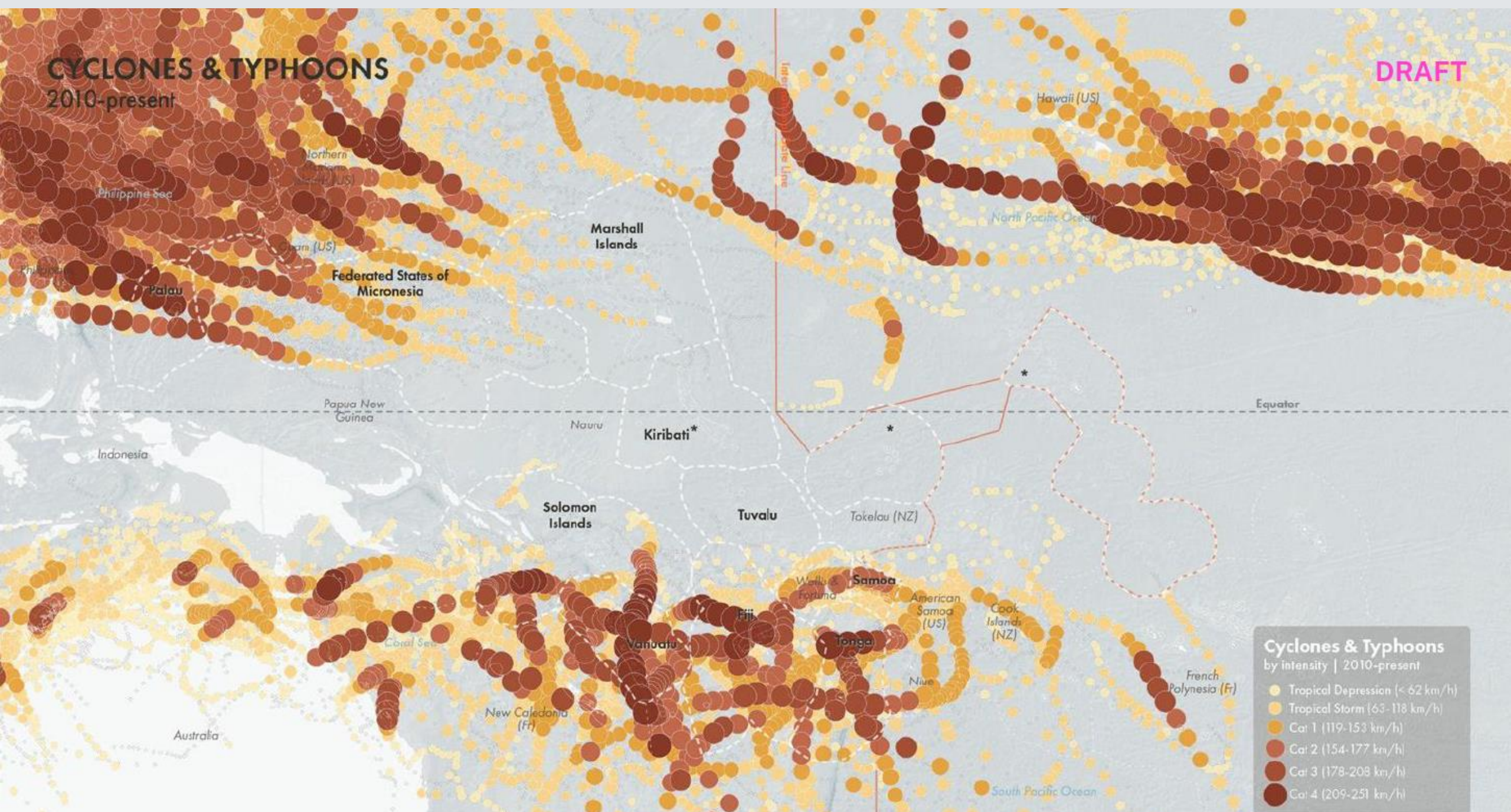
Conversation III

Disaster and Climate Risk Financing Strategies: Layering Instruments to Protect Against Future Shocks

Agenda:

- 13.15-13.25 Opening
- 13.25-13.55 Panel discussion
 - **Mr. Fa'avae Mulitalo**, Samoa
 - **Ms. Malie Tarwillin**, RMI
 - **Ms. Kayleen Fanega**, Solomon Islands
- 13.55-14.00 Discussant
 - **Mr. Tony Kaltong**, Vanuatu
- 14.00-14.10 Facilitated plenary discussion on Loss and Damage Fund
- 14.10-14.15 Closing

The Pacific region is increasingly exposed to multiple and compounding natural and climate-related hazards

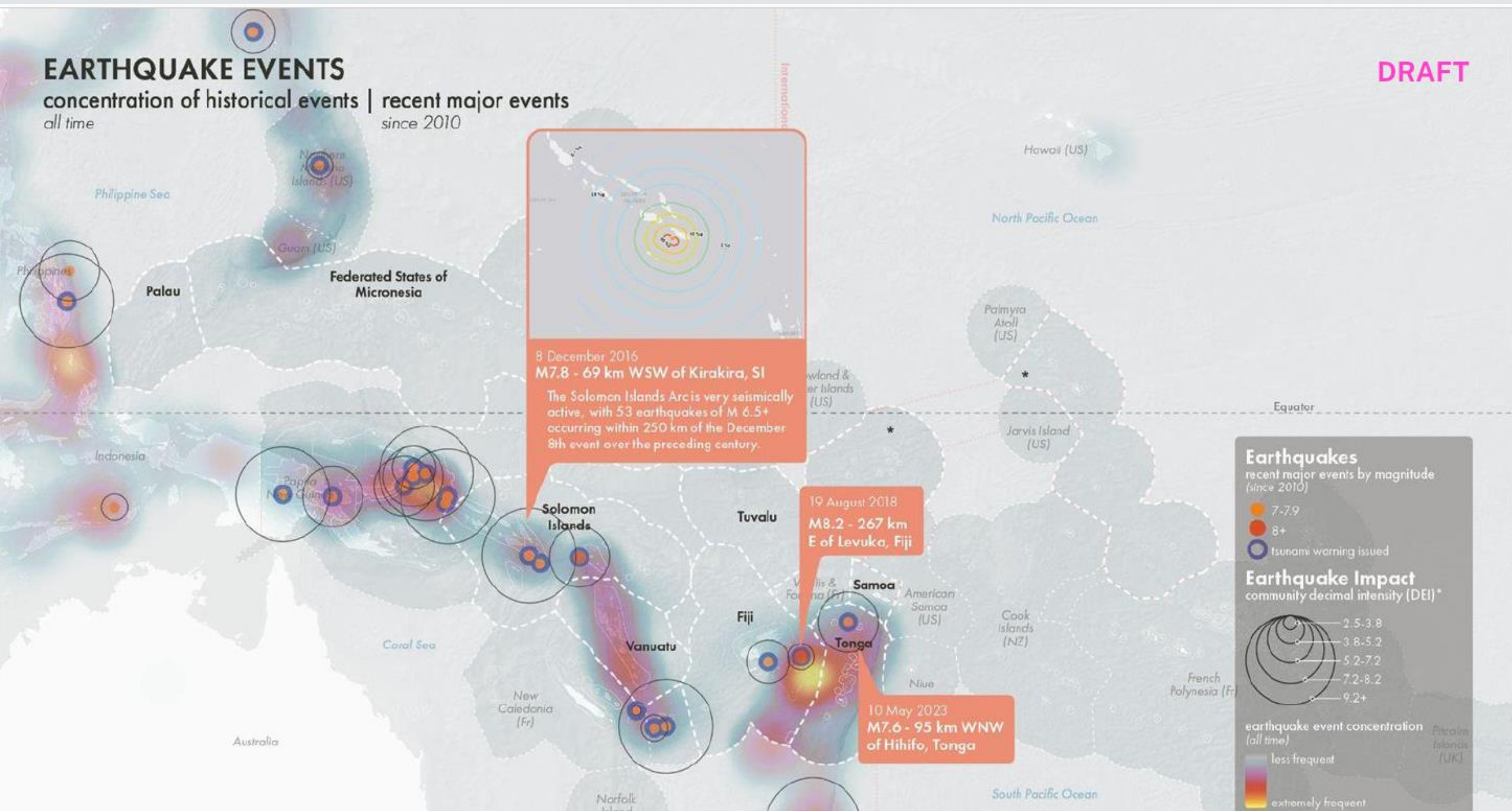


The Pacific region is increasingly exposed to multiple and compounding natural and climate-related hazards

DRAFT

EARTHQUAKE EVENTS

concentration of historical events | recent major events
all time | since 2010



Earthquakes

recent major events by magnitude (since 2010)

- 7-7.9
- 8+
- Tsunami warning issued

Earthquake Impact

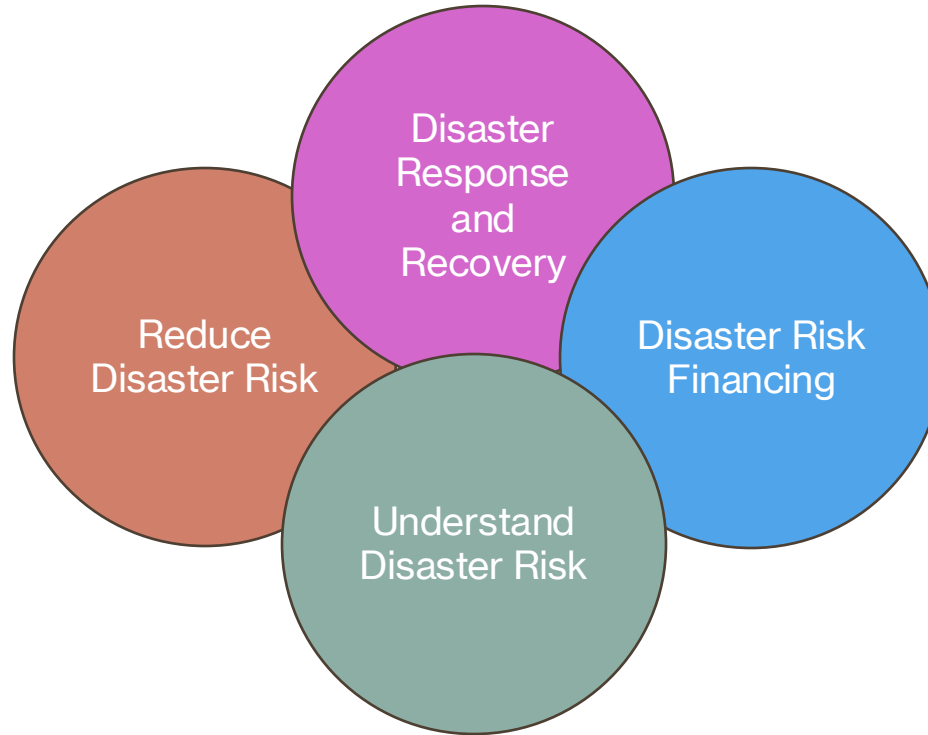
community decimal intensity (DEI)*

- 2.5-3.8
- 3.8-5.2
- 5.2-7.2
- 7.2-8.2
- 9.2+

earthquake event concentration (all time)

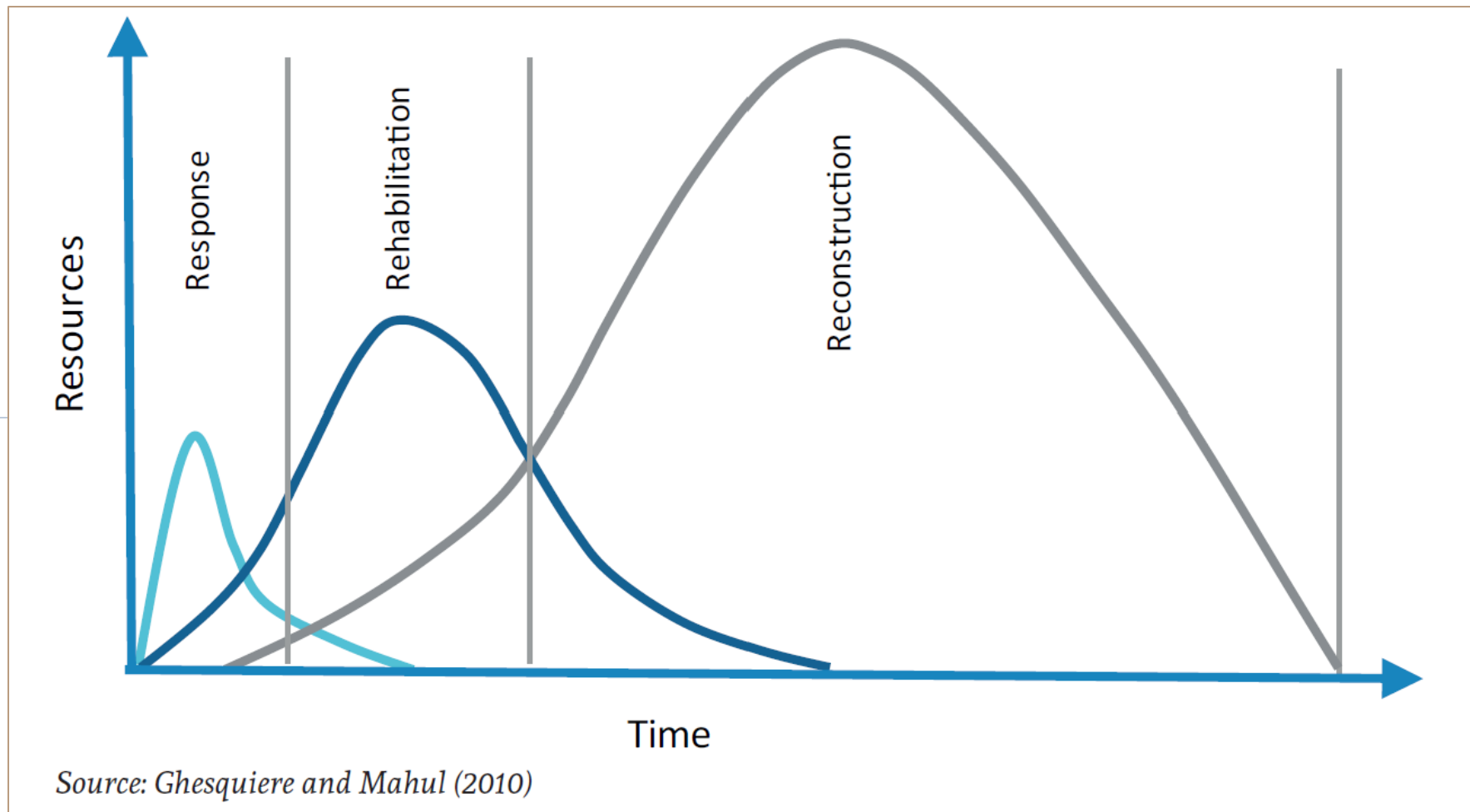
- less frequent
- extremely frequent

“Risk Financing is a crucial component of disaster preparedness and response”

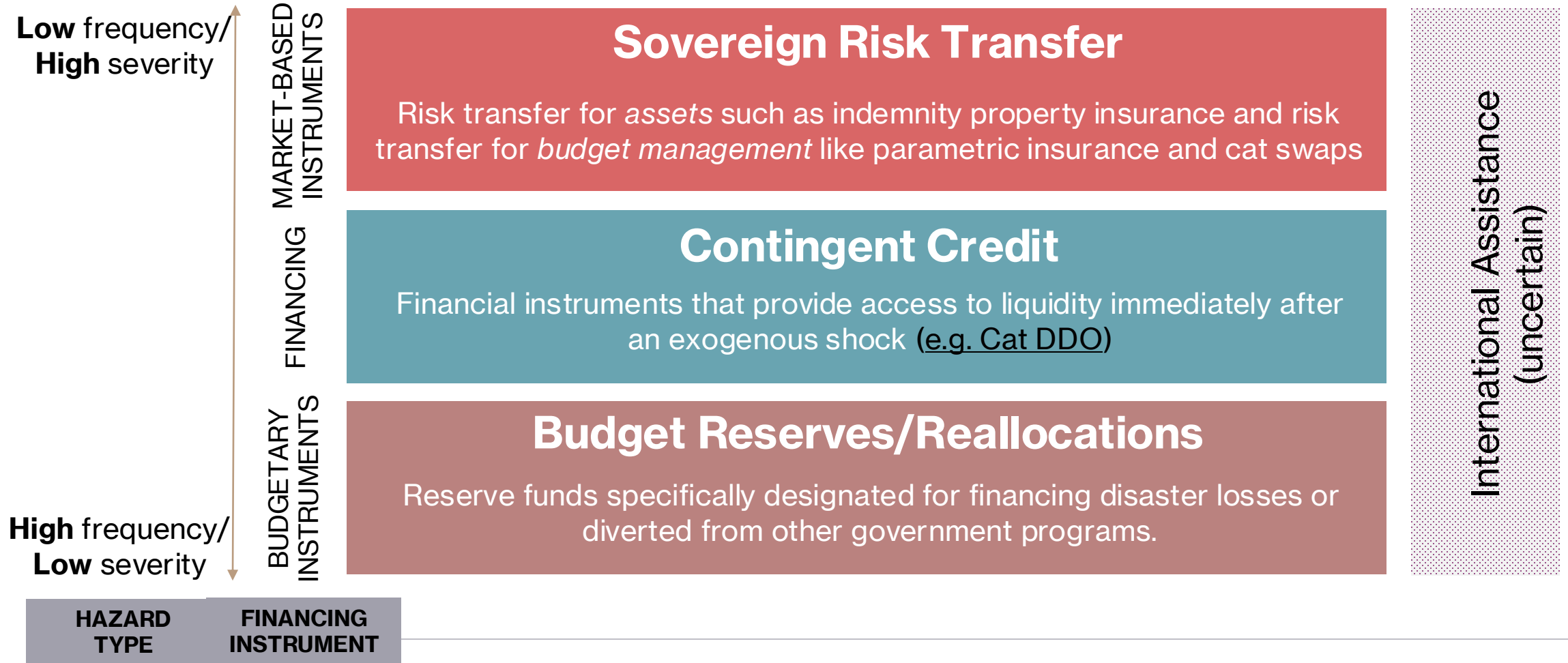


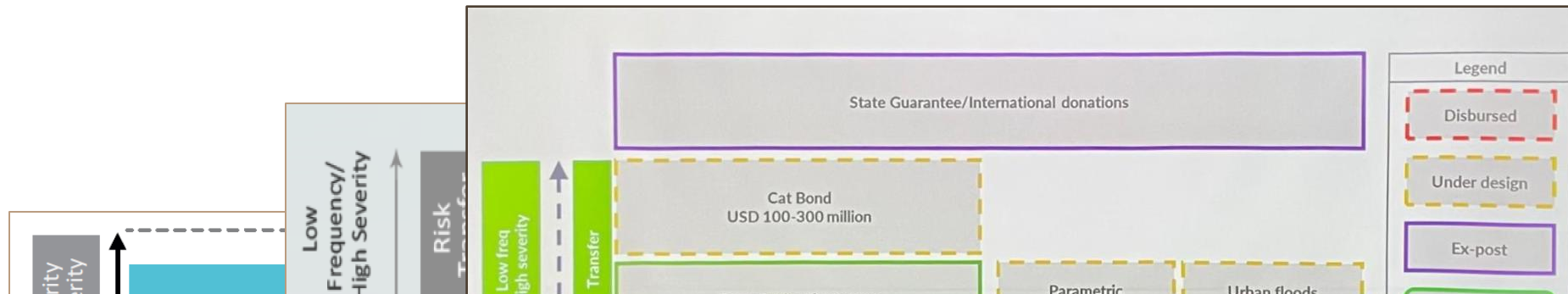
The Disaster Risk Management perspective

“Temporal Dimension of Post-Disaster Resource Needs”

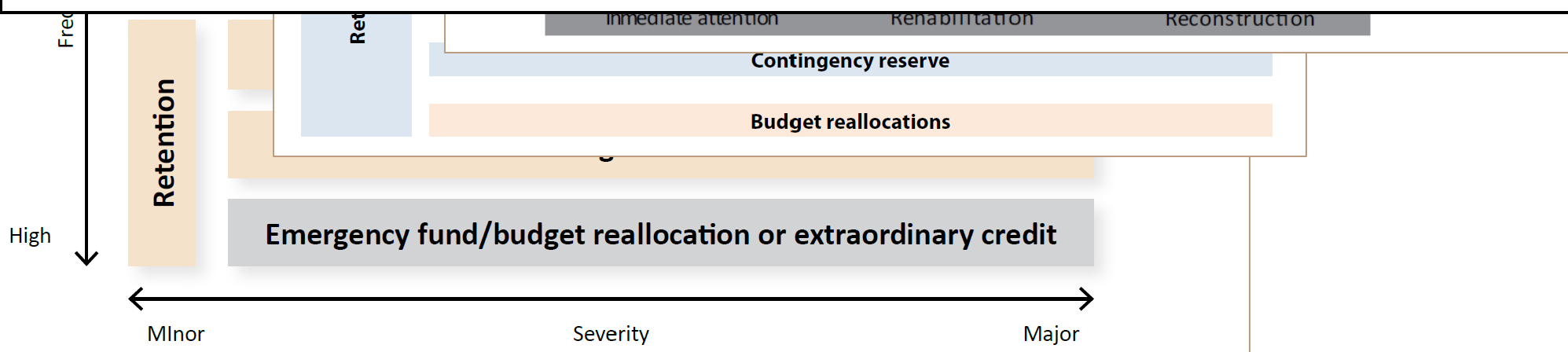


“Financial risk layering can support Pacific Island Countries (PICs) to better protect livelihoods and assets”





“....it is cost-effective to adopt a risk layering approach to mitigate the financial impact of [climate and] disaster events of different frequency and severity. Typically, optimal combinations of risk financing instruments include a combination of risk retention and risk transfer instruments...”



Disaster Risk Financing

Instruments and Policy Framework

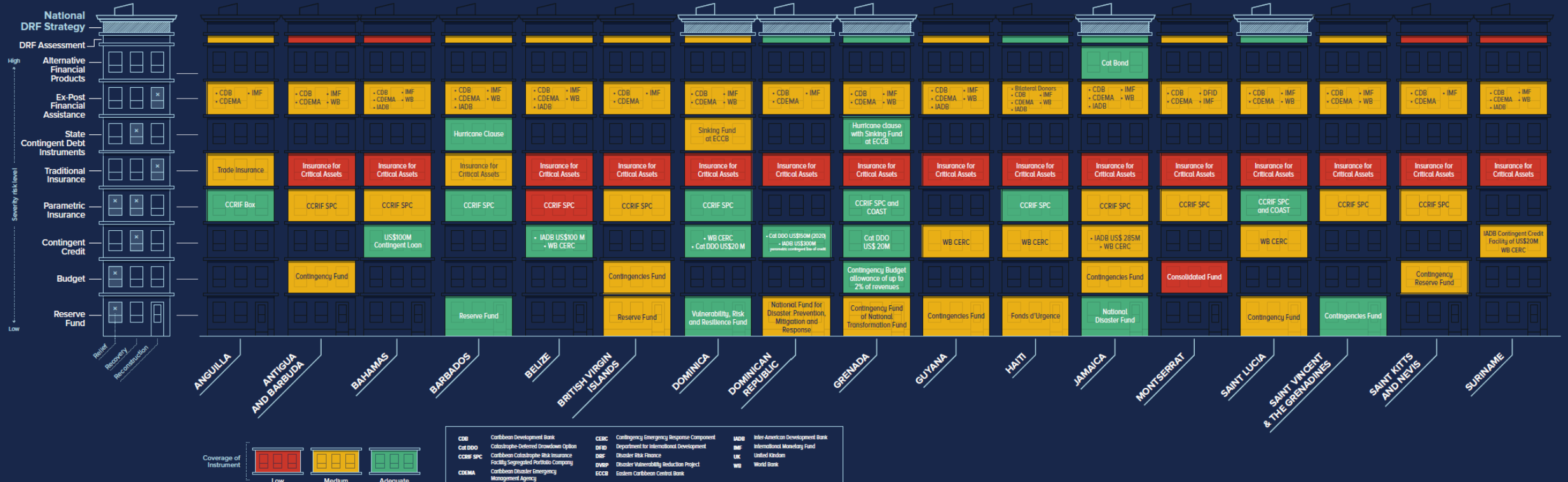
Select Caribbean Countries



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Afternoon Tea Break

Agenda:

- 14.15-14.30 Cultural Performance (Tongan Association) – kava demonstration



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Conversation IV Evidence-based Vulnerability Assessments: Using Risk Information to Prioritize Critical Public Assets



Speakers:

Mr. James Myazoe, Manager, Ministry of Public Works Infrastructure and Utilities,
Republic of the Marshall Islands

Laavaneta Juliano, Specialist, Quality Control and Inspection Division, **Kiribati**





Conversation IV

Evidence-based Vulnerability Assessments: Using Risk Information to Prioritize Critical Public Assets

Agenda:

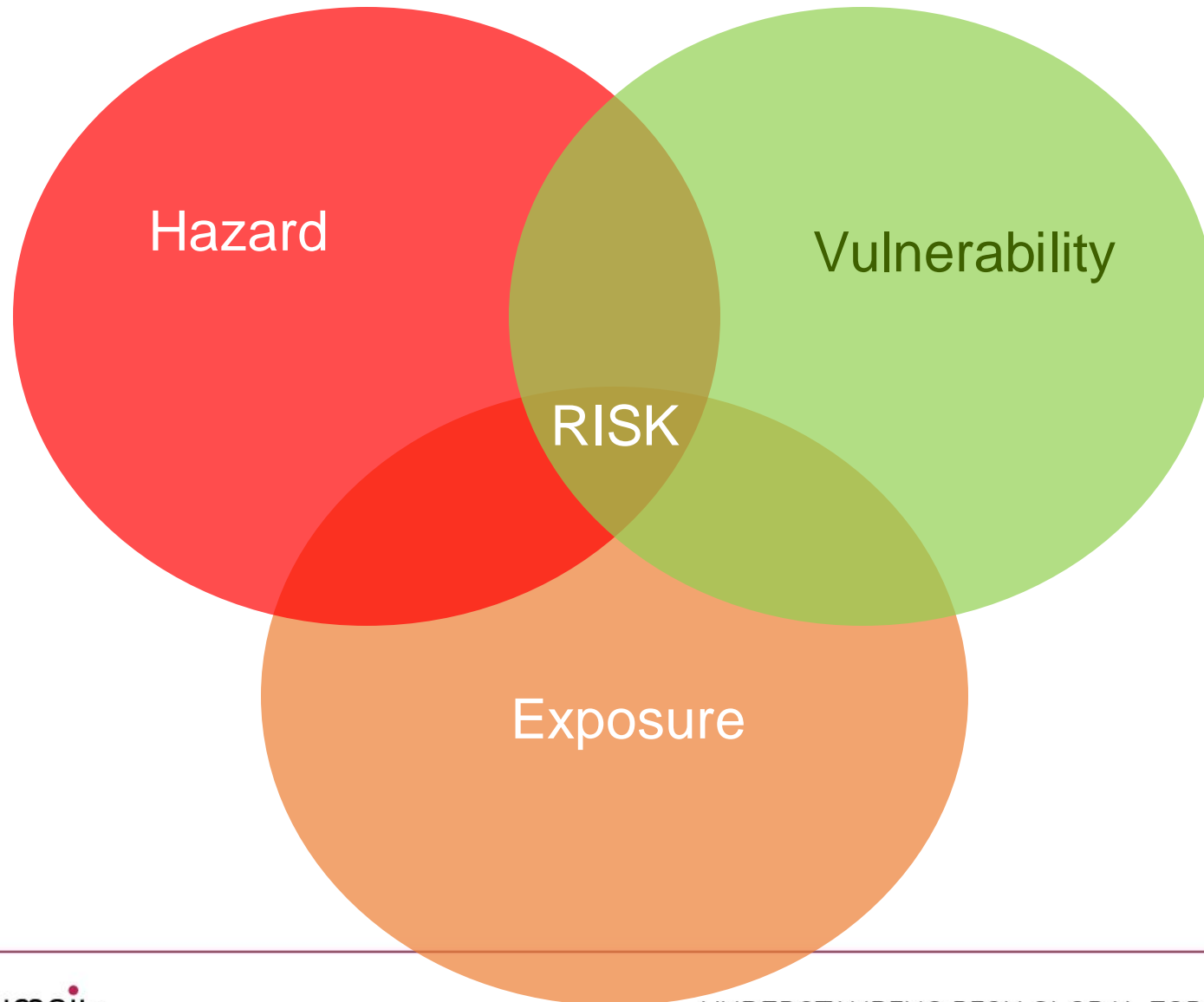
- 14.30-14.35 Opening
- 14.35-14.50 Videos – vulnerability assessments in the Pacific
- 14.50-15.20 Panel discussion
 - **Mr. James Myazoe**, RMI
 - **Ms. Laavaneta Juliano**, Kiribati
 - **Mr. Pisi Seleganiu**, Tuvalu
- 15.20-15.40 Plenary Discussion
- 15.40-15.45 Closing

Marathon not a sprint

Realization of risk has legal and cost consequences for Government



Defining risk assessments for vulnerable public assets



Hazard

How likely is a hazard event to occur, and what is the intensity?

Vulnerability

How damageable are the exposed assets and how susceptible are building occupants?

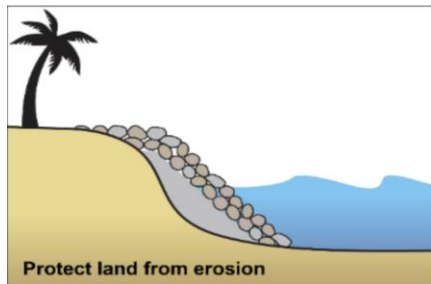
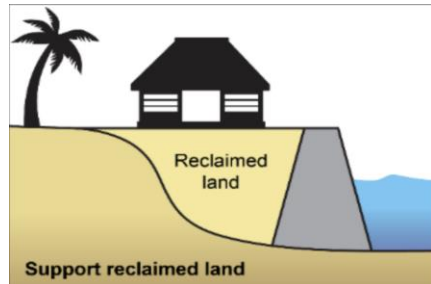
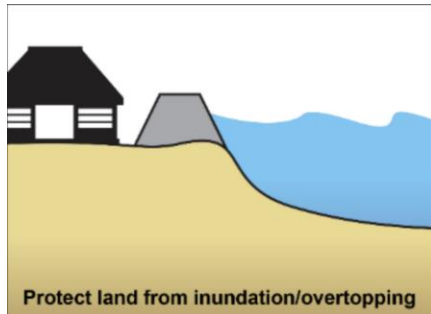
Exposure

What are the characteristics, functions, and replacement values of exposed assets or the number of building occupants?

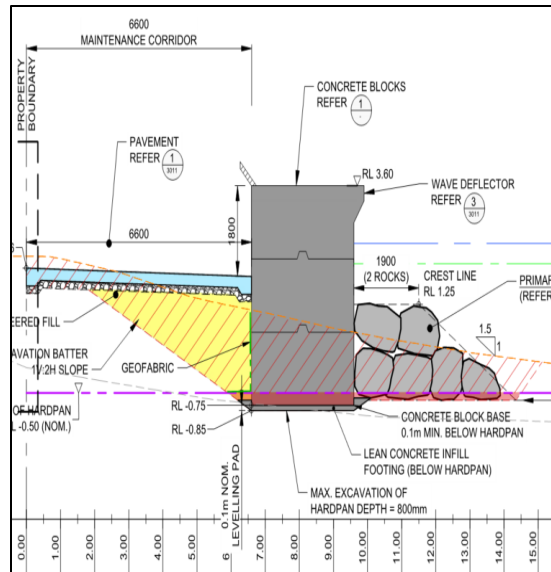
Climate Risks and Impacts



Coastal Resilience



Physical Wave Modeling



Discussion Questions

What are the different types of vulnerability assessments for public assets in your country?

How can we ensure vulnerability assessments are comprehensive and consider multiple hazards?

How can vulnerability assessment data be integrated with existing planning and budgeting processes?





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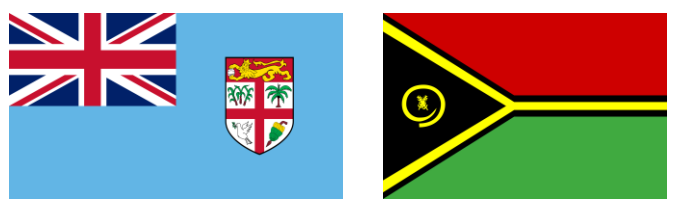
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UNDERSTANDING RISK
GLOBAL FORUM 2024

TRADITION • INNOVATION • RESILIENCE



Conversation V Participatory Planning Workshops: Incorporating Diverse Voices and Traditional Knowledge in Resilience Building

Speakers:

Ms. Ruci Kurucake, Senior Policy Office, National Disaster Management Office, **Fiji**

Mr. Selevasio Tagivuni, Climate Change Adviser, Ministry of Public Works, Meteorological Services & Transport, **Fiji**

Mr. Peter Korisa, Head of National Disaster Recovery Unit, Prime Minister's Officer, **Vanuatu**



GFDRR
Global Facility for Disaster Reduction and Recovery



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Conversation V

Participatory Planning Workshops: Incorporating Diverse Voices and Traditional Knowledge in Resilience Building

Agenda:

- 16.00-16.05 Opening
- 16.05-16.15 Presentation – disability inclusion and disaster risk management in the Pacific
- 16.15-16.30 Brief Reflections
 - **Ms. Ruci Kurucake and Mr. Selevasio Tagivuni, Fiji**
 - **Mr. Peter Korisa, Vanuatu**
- 16.30-17.15 Facilitated participatory design workshop
- 17.15-17.30 Plenary presentation and closing



Disability in the Pacific and Importance of Social Inclusion in DRM

Pacific Talanoa Hub

Conversations on Innovative Tools and Strategies for Resilience

Thursday 20 June 2024 | 9:00am - 6:00pm | Room 407

Understanding Risk Global Forum 2024



What are the development outcomes of inclusivity?

Enhanced Quality of Life

Improves access to education, employment, and healthcare, leading to better health and independence.

Economic Benefits

Enables **workforce participation**, driving economic growth and innovation.

Accessibility and Participation

Ensures infrastructure and services are accessible, promoting **full participation** in social and economic activities.

Why is disability inclusive Disaster Risk Management (DRM) important?



80% of persons with disabilities live in developing countries. Disability inclusive disaster risk management (DRM) directly **benefits a significant proportion of the world population**



Persons with disabilities face heightened risks at each stage of DRM due to a range of physical, communication, policy, and attitudinal barriers.



Promotes an all-of-society approach that is paramount to the reduction and management of disaster risks.

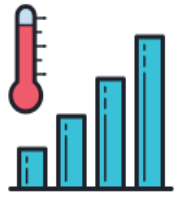


Disability-inclusive DRM **can empower persons with disabilities to take their rightful place as agents of change for DRM policies, plans, and standards.**

What are the key principles for inclusion of persons with disabilities in DRM?

- 1 Include** persons with disabilities as valued stakeholders in disaster risk management activities
- 2 Remove** barriers to the full participation of persons with disabilities
- 3 Increase** awareness among Governments and their partners of the safety and security needs of persons with disabilities
- 4 Collect and use** data that is disaggregated by disability
- 5 Ensure** that new construction, rehabilitation and reconstruction are accessible to persons with disabilities.

What is the context in the Pacific Islands?



Island nations experiencing the **impacts of climate change** are at risk high levels of economic loss and social disruption.



In 2020 it was estimated that at least **1.5 million Pacific Islanders** were living with some form of **disability**.

Challenges



- Accessing warning messages
- Responding with timely and appropriate defensive actions
- Engaging with any disaster management processes.

How to better understand and address these challenges?

Accessibility barriers: Refers to the **lack of structural and non-structural accessibility**. These barriers can be mitigated with the right policy and mechanisms.

Information and communication systems	Buildings and public spaces, transport	Public infrastructure -	Support systems and networks
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Attitude barriers: Need to **reframe how we think of 'disability'** - away from the condition relating to the person and towards accessibility of the service/ product / environment / infrastructure / information.

Attitudes of pity, helplessness and stigma	Exclusion, discrimination, and stereotyping	Design FOR rather than WITH persons disabilities	Excluding the views of persons with lived experience of disability
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How to frame practicable and actionable interventions?

1. Governance Representation



- Identification and Outreach
- Committee Integration
- Feedback Mechanisms

2. Inclusive Building Code Implementation



- Awareness and Training
- Monitoring and Enforcement
- Public Awareness

How to frame practicable and actionable interventions?

3. Facilitated Participation



- Accessible Platforms
- Feedback Collection
- Continuous Engagement

4. Accessibility in Infrastructure



- Design Guidelines
- Stakeholder Training
- Review and Feedback

5. Capacity Development



- Broad Outreach
- Committee Integration
- Feedback Mechanisms

Why are participatory approaches important for disability inclusion in DRM?

1

Ensure that No One is Left Behind: Involving all groups, especially people with disabilities, ensures that DRM plans are comprehensive and address the needs of the entire community.

2

Leverage Diverse Perspectives: People with disabilities bring unique insights and experiences that can enhance the understanding of risks and vulnerabilities.

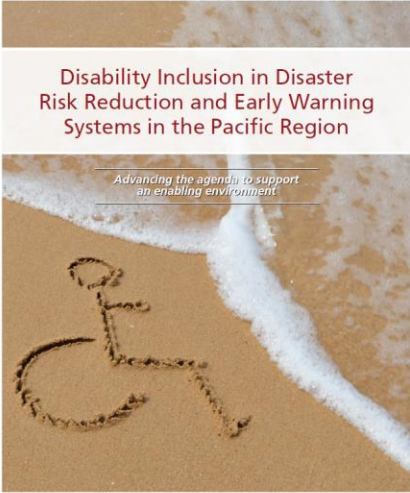
3

Build Trust and Cooperation: Engaging all groups encourages a sense of shared responsibility and collective action in disaster preparedness and response.

4

Enhance Preparedness and Resilience: Involving diverse groups leads to the development of adaptive and flexible strategies that can effectively respond to a wide range of scenarios

How to promote inclusive design in DRM interventions?



recommendations for the Republic of the Marshall Islands Urban Resilience Project to enhance the inclusion of persons with disabilities

These recommendations aim to ensure an inclusive approach that takes into account the needs and perspectives of persons with disabilities in all aspects of the project.

Governance Representation Ensure Inclusive Decision-Making by including disability community representatives in project management for comprehensive perspectives and more inclusive outcomes.	Capacity Development Strengthen empowerment by extending capacity-building efforts to individuals with disabilities, fostering their active involvement in key decisions related to urban planning and climate adaptation.
Accessibility in Infrastructure Propose project adherence to Universal Design standards, ensuring public facilities incorporate accessibility features such as wide pathways, ramps with handrails, non-slip surfaces, and accessible toilets with adequate lighting.	Facilitated Participation Ensure inclusive consultation and planning by proactively facilitating the active involvement of persons with disabilities through accessible physical spaces and communication methods.
Advocacy for Inclusive Building Codes Advocate for accessibility by enforcing Building Codes and actively involve persons with disabilities in the review and development of building codes, land use plans, design policies, and risk mapping.	Management and Monitoring Adopt metrics to monitor the representation and active inclusion of persons with disabilities in decision-making, training opportunities, and Universal Design principle enforcement.

GFDRR | GFDRR INCLUSIVE DRM AND GENDER EQUALITY | <https://www.gfdr.org/en/inclusion-drm>



Priority (Pyramid ranking) Feasibility (by # of dots)

Develop a detailed directory for disability-focused groups w/ individuals

1	Develop a detailed directory for disability-focused groups w/ individuals	25
2	Revise committee structures to ensure representation from disability-focused groups.	25
3	Organize orientation sessions for new members detailing DMMUR objectives.	25
4	Schedule regular feedback sessions utilizing technology for inclusive participation.	25
5	Identify regular community events to engage and update stakeholders.	20
6	Establish a committee channel for stakeholders to provide suggestions/feedback and suggestions.	15

GOVERNANCE GROUP

Thank you!

Cristina Otano, Senior Operations Officer
Climate and Disaster Risk Management Unit
World Bank
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Context: Disaster and development impacts everyone, but participatory planning is often overlooked. This highlights the need for inclusive disaster risk management (DRM) that considers all citizens' needs and participation. This session will explore these challenges and how urban development and DRM can be tailored for a more inclusive and resilient future.

Design Exercise

The Site:

- Atollic is the capital city of an atoll nation. It is a dense urban environment with a population of 25,000 and experiences extreme heat island effects and has very limited land. The island is narrow with a lagoon on one side and the ocean on the other. There is little public open space, few mature trees and shade, and limited and disconnected sidewalks. The average height above sea level is less than 2.5 meters.
- Lagoon Park is a public open space on the lagoon side of the island. The park is centrally located and adjacent to government and commercial activity. To the southeast is a shopping center and surface parking lot with one of the main supermarkets on the island, to the north are several commercial shops, and to the northeast is an abandoned government complex.
- Lagoon Park is approximately 16,000 m². It has grass fields, sheltered picnic areas, food carts, and a sandy beach. The park also serves as a temporary storage and staging area (e.g., concert stage, shipping containers, construction equipment). The beach is used for recreation, fishing, and as a boat launch. The entirety of the park is less than 1m in elevation. The park is used for daily recreation (soccer, rugby, volleyball, fishing), socializing, and economic activities (boat launch, food carts). The park also hosts major events such as national holiday celebrations and concerts.
- The major risks present in Lagoon Park include major inundation, flooding, heavy winds and rain, typhoons/cyclones, tsunamis, and soil and water contamination. Following heavy rains, the space is largely unusable for several days due to inundation.
 - A tsunami would occur from the ocean-side direction only. Atollic's barrier reefs have helped protect the island from large waves.
 - Storm surges are frequent occurrences and are most likely to occur from the East with the prevailing trade winds.
 - Pluvial flooding is non-directional and affects low-lying areas. Stormwater infrastructure is not common in Atollic.
 - Sea level rise would occur from all directions. Predictions vary, but a rise of 1-2m in the next 100 years is possible (2m would inundate nearly all of Atollic's urban area).
- The site and the island are also highly exposed to heat stress, and therefore, the conservation and improvement of Lagoon Park is an important aspect in the resilient urban development of Atollic.
- To date, accessibility provisions in the built environment have not been enforced. The island is car-centric with already limited sidewalks often overtaken by parked cars. There is a sidewalk immediately in front of Lagoon Park, but no marked pedestrian crossings and the sidewalk ends at the park's boundaries.
- All land is privately owned through family lineages. Although the Government can legally expropriate property under the country's constitution, this right has never been exercised.

The Scenarios:

- Participants will divide into 2 groups, who will design a different future vision for Atollic through improvements to Lagoon Park and the adjacent government building complex.
- *Group 1:* Atollic prioritizes climate-sensitive urban development AND urban growth policies
- *Group 2:* Atollic prioritizes climate-sensitive urban development BUT not urban growth policies

The Participants:

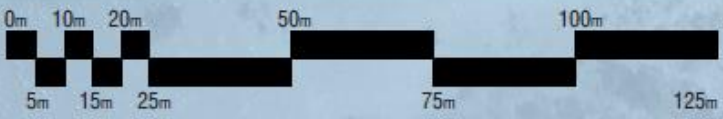
- Mayor of Atollic
- Official of National Disaster Management Office
- Landowner of Lagoon Park
- Elderly resident who uses Lagoon Park for socializing and exercise

Optional Participants:

- Director of Environmental Protection Agency
- Young couple who has had trouble finding an affordable home in Atollic
- Resident who uses a wheelchair
- Woman who runs daycare business adjacent to Lagoon Park

The Exercise:

- Based on your character and scenario, re-design Lagoon Park and the adjacent government complex, considering what this means for wider Atollic
- What is the group's main focus and ultimate design goal? Which risks and vulnerabilities did you address? What issues, problems, and gaps did you identify?
- What are the critical barriers that Atollic faces regarding its resilience and ability to implement public spaces and development?
- What are activities not currently supported or under-supported in public spaces that you think should be present (e.g., disaster risk management interventions, recreational or economic activities, walking/biking infrastructure, gathering spaces for cultural activities and community groups)
- How can the space be made inclusive for all?



PACIFIC URBAN PARK



LAGOON

SITE





Closing

Agenda:

- 17.30-18.00 Reflections on the day
 - **Mr. Malaki Iakopo**, Assistant CEO, Water Resources Division, Ministry of Natural Resources and Environment, **Samoa**
 - **Mr. Vatulele Tuputupu**, Director, Corporate Services, Ministry of Energy, Information, Disaster and Climate Change, **Tonga**