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Finance and Technology Day
The Commonwealth
Role of earth observation data and tools for improving flows of climate finance: experiences from Fiji, Solomon Islands and Vanuatu

4 November 2021

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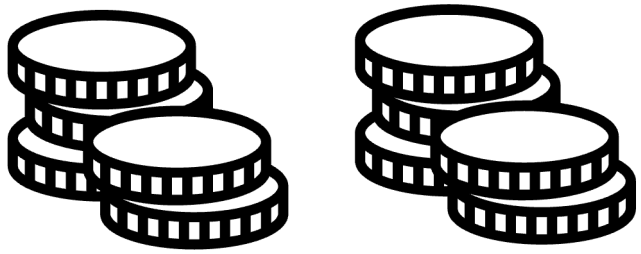
Fiji

Climate Finance Needs Versus Access

LDCs: 20.5% of Reported Climate Finance

SIDS: 3% of Reported Climate Funds. Pacific SIDS only 1%

~ Oxfam Climate Finance Shadow Report 2020



- **The total amount allocated and spent amounts fall short of at least FJD$3.28 billion** Fijian dollars **in annual climate finance needs,** as determined by available estimates. Underpinning an urgent need for increased climate finance in Fiji.
- SIDS are 'underrepresented' throughout the stages of project pipeline development, **with only 12 per cent of the funding proposal pipeline in the Green Climate Fund (GCF) by October 2020.**

Setting the context and need for EO data

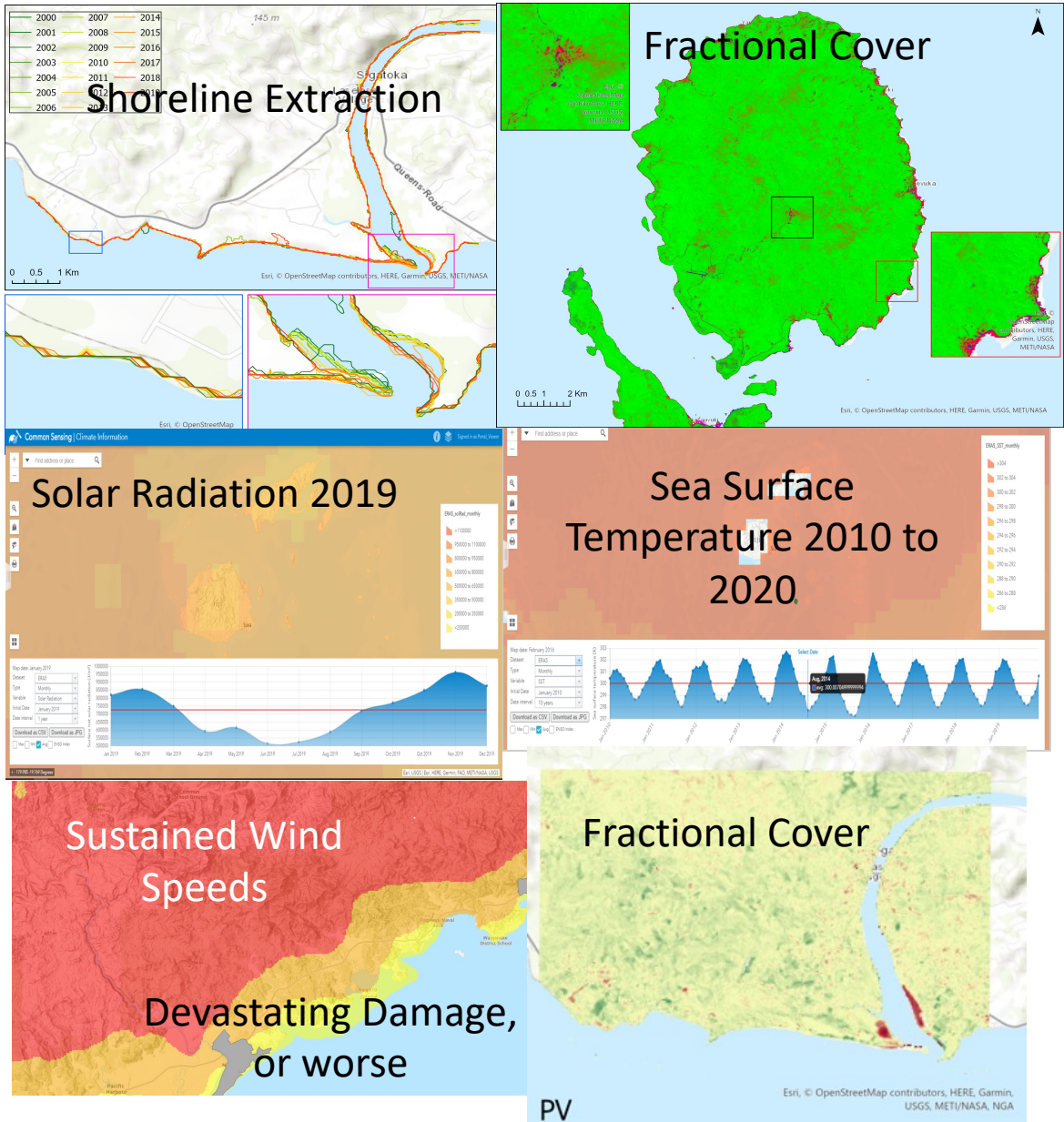
- Securing funding from the major international and regional climate funds can be difficult. **Consuming and complex access, formats, justification, evidence climate rationale**
- **Major climate funds – GEF, GCF, Adaptation Fund, require strong justification, clear baselines and climate change-focused rationale for approving project proposals**. These funds have been explicit about the role of EO in this in the different ways outlined below
- With technology is the emergence of more and enhanced forms of data from initiatives. **CommonSensing project is an example of the innovative use of EO**
- **Aims to develop national capacities for longer-term provides partner countries with the knowledge and skills sets for institutionalising evidence based decision-making**. USP Students, undergraduate, postgraduate diploma, research (masters and PhD) - earth science, marine management, biology or geography, maths being trained.
- Assists in **coordination financing NDC implementation, but additionally improves evidence-based decision-making in** disaster preparedness and response, as well as assessing climate risks

IEU Findings:
Access to data

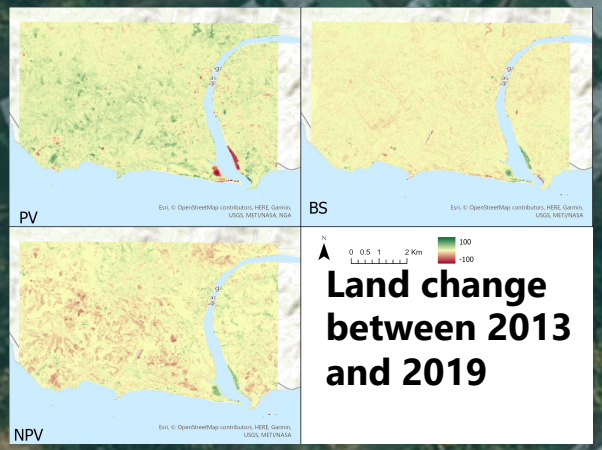
- SIDS have limited access to data
- Historical and baseline data for climate, especially for less populated islands and regions and for slow onset events
- Creates limitation in preparing project proposals
- Compounded with capacity

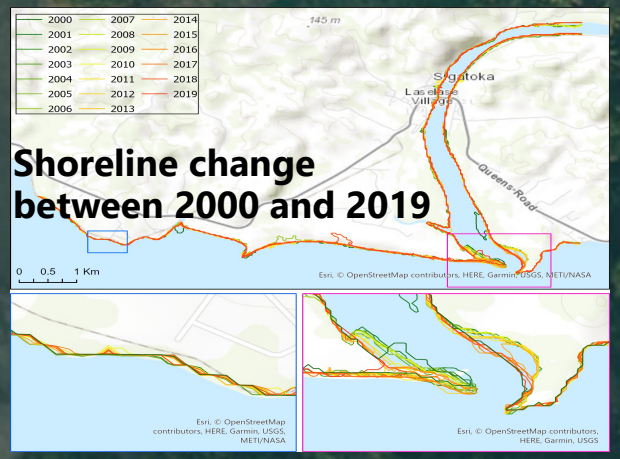
Commonsensing tools

- CF objective is **to use Commonsensing tools to strengthen proposal development**
- Defining **the need for robust data,** use of EO and geospatial data and its role in accessing Climate Finance – donor perspective and **EO role in Climate Finance** – examples
- CS at Project stages – pre-feasibility, proposal, implementation, monitoring
- Data Cube products can be applied to Adaptation and mitigation project proposals

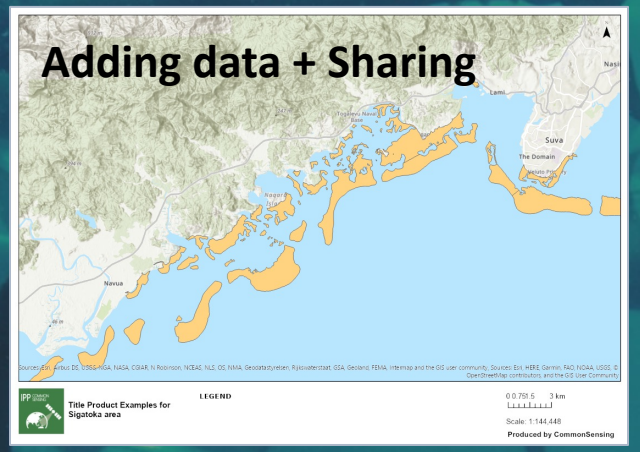


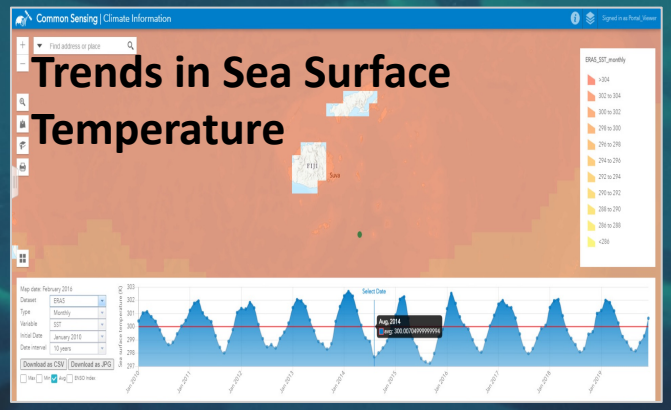
SCENARIO 1
Adaptation to Climate Change in Coastal Zone
(Adapted from GEF proposal for Vanuatu)



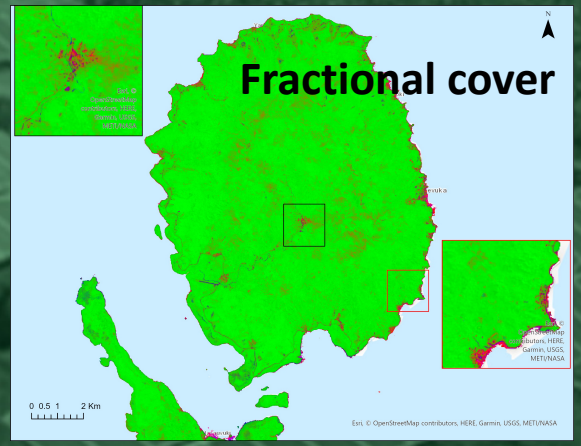


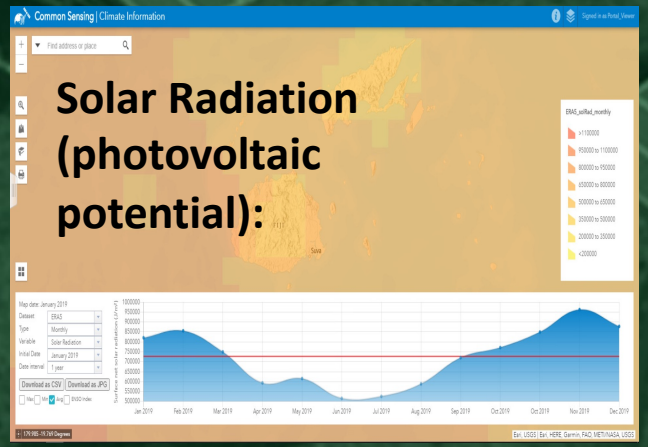
SCENARIO 2
Adapting Pacific Island Tuna Fisheries to Climate Change (GCF





SCENARIO 3
SAP016: Fiji Agrophotovoltaic Project in Ovalau





Practical application of CommonSensing for project pipelines in Fiji

- Currently **working with the MoE, Catapult and UNITAR to build capacity in the practical application and utilisation of EO data to enhance climate finance** proposals and scale projects under implementation.
- **Climate Finance Writeshop training, including practical use of the CommonSensing platform** (August 2021 for MoE and FDB staff)
- **Utilise the CommonSensing platform to assess and add value to live proposals and concepts identified in GCF country programme** (and other).
  - Fiji Rural Electrification Fund (Finance/Mitigation) -MoE
  - Climate Change Relocation (Finance/Adaptation) -MoE
  - Ebus -decarbonisation of public bus transport in Fiji (Finance/ Mitigation) – FDB
- EO can be used for **calculating baselines and reference conditions and for measuring the direction and rate of change for projects relating to sea-level rise, flooding, land degradation, fisheries, coastal protection, food security, exclusive economic zones (EEZs) and marine agreements**, for example.
- Improved use of data can **contribute to turning country priorities and Nationally Determined Contribution (NDC) commitments into climate finance investment plans and projects**, thereby addressing the financing gap where the implementation of many NDCs is conditional on external financing being received.

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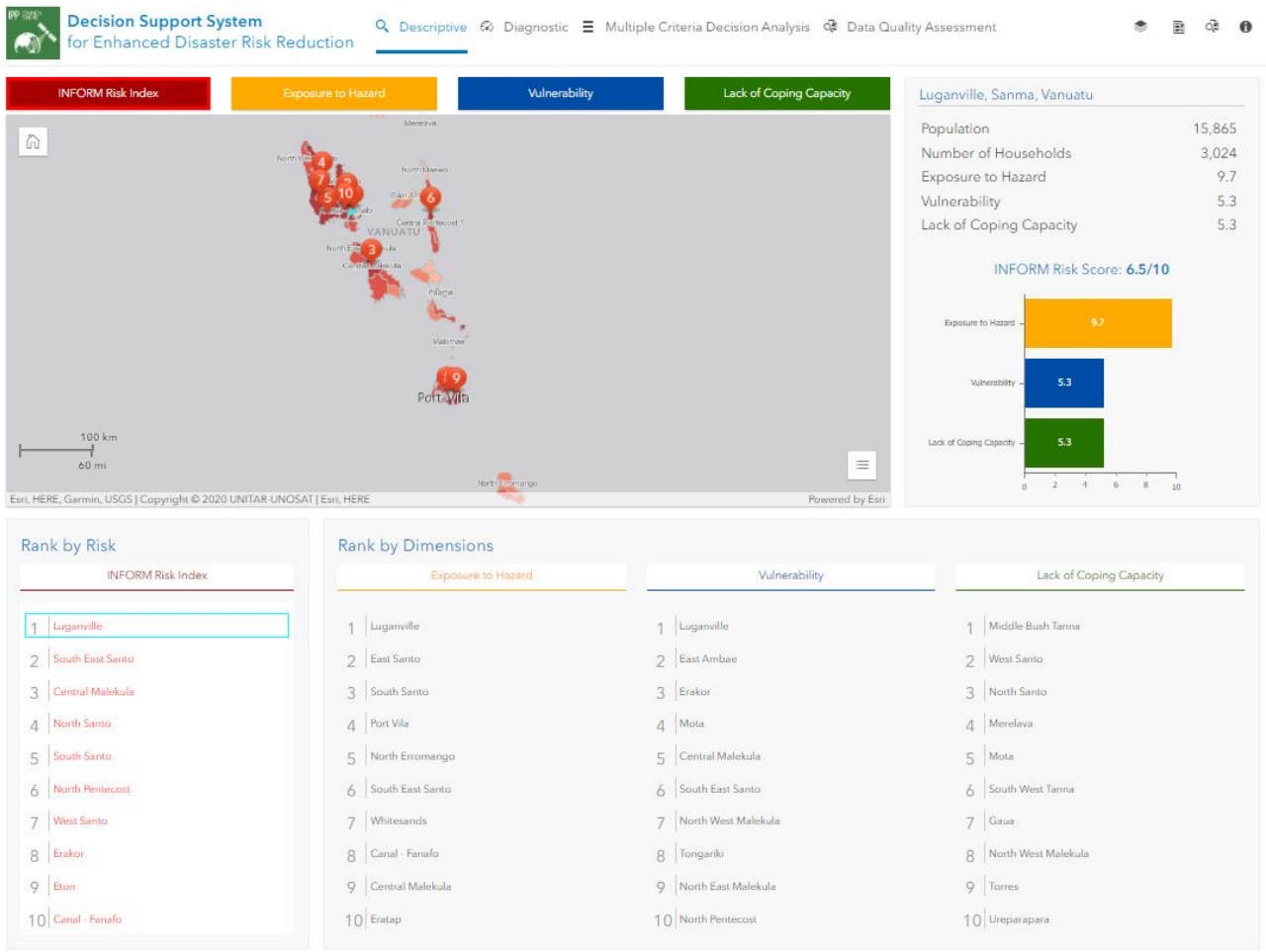
Vanuatu

Home / **Vanuatu - Decision Support System**

Decision Support System for Enhanced Disaster Risk Reduction

Vanuatu, one of the partner countries of the CommonSensing, is exposed to various natural hazards and the disaster risk is further aggravated through the negative effect of climate change. The Decision Support System will provide contextual analyses of a variety of hazards, risk, vulnerability, and coping capacity data based on INFORM sub-national methodology to improve situational awareness. The users will be taken through a storyline describing where is the risk? why there is a risk? and what can be done to reduce the risk?



CS Decision Support System Tool

Hydrological Information Development for Sarakata Watershed, Vanuatu

The hydrological information is derived from Alos Palsar high resolution digital elevation model.

TC Harold 20 Damage 3D Visualization, Luganville, Vanuatu

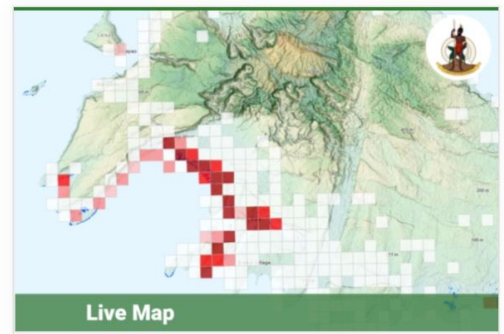
This map illustrates potentially damaged structures and buildings in Luganville town, Vanuatu.

TC Harold 20 Emergency Response Dashboard, Vanuatu

TC Harold 20 Emergency Response Dashboard - Provisional Dashboard Provided by UNOSAT.

Rainfall Network Map, Vanuatu

Area of Interest - Vanuatu



Tsunami Risk Map, Vanuatu

Area of Interest - Vanuatu

Awareness Raising

Technical Training

Technical **Backstopping**

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Solomon Islands

Access the site here:

Solomon Islands - Descriptive (cern.ch)

Home / Solomon Islands - Decision Support System

Decision Support System for Enhanced Disaster Risk Reduction

The Solomon Islands, one of the partner countries of the CommonSensing, is exposed to various natural hazards and the disaster risk is further aggravated through the negative effect of climate change. The Decision Support System will provide contextual analyses of a variety of hazards, risk, vulnerability, and coping capacity data based on INFORM sub-national methodology to improve situational awareness. The users will be taken through a storyline describing where is the risk? why there is a risk? and what can be done to reduce the risk?

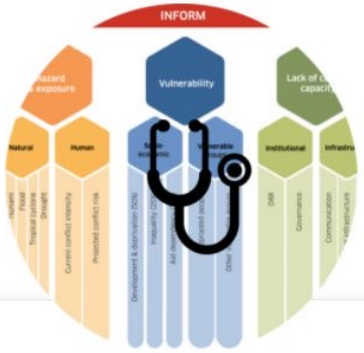
CommonSensing intends to build Disaster Risk Reduction (DRR) and Climate Change Resilience (CCR) through informed decision-making provided by Earth Observation and geospatial information technologies. The CommonSensing project is delivered by providing geospatial and climate information, decision-making tools and capacity development for various levels of government staff ranging from technical experts to decision-makers. The partner countries (Fiji, Vanuatu and Solomon Islands) are exposed to various climate-related hazards, and climate change can increase disaster risk, namely through changing exposure patterns and the increase in frequency and intensity of hazard events. Climate variability could further aggravate uncertainties related to the geographic distribution of weather-related hazards, which may lead to new patterns of risk thereby potentially rendering traditional coping capacities less effective. Thus, one of the key application domains of the CommonSensing project is disaster risk reduction (DRR).

This platform will inform decision-makers on disaster risk and its elements to bring real impact towards reducing disaster risk and increasing resilience to climate change.

Descriptive Analytics

The descriptive analytics presents the INFORM risk index at the sub-national level, where users can easily recognise the relative risks of different administrative units.

LAUNCH TOOL



Diagnostic Analytics

The diagnostic analytics breaks down the INFORM risk index into exposure to hazard, vulnerability, and lack of coping capacity indexes for selected sub-national levels.

LAUNCH TOOL

MCDA

The Multiple Criteria Decision Analysis tool allows decision-makers to find an optimal disaster risk reduction measure based on multiple factors.

LAUNCH TOOL

Data Quality Assessment

The Data Quality Assessment shows OSM map coverage by comparing the number of OSM object counts (number/km^2) to the local population density (population/km^2).

LAUNCH TOOL

Country Specific Decision Support System

Supporting decision-makers in answering the critical questions related to climate change resilience

Fiji
EXPLORE TOOL

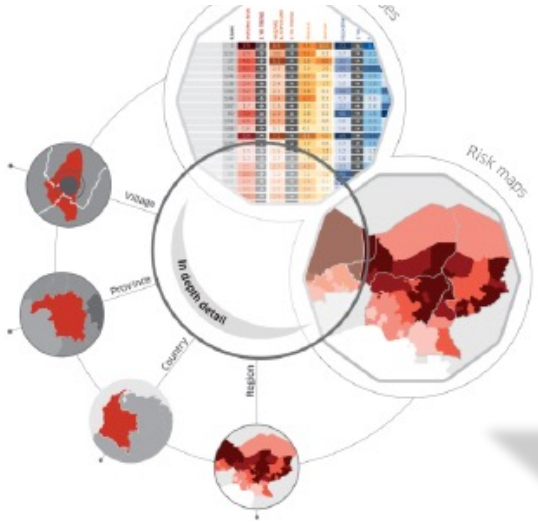
Solomon Islands
EXPLORE TOOL

Vanuatu
EXPLORE TOOL

INFORM Index

INFORM is a global, open-source risk assessment for humanitarian crises and disasters. It can support decisions related to prevention, preparedness and response.

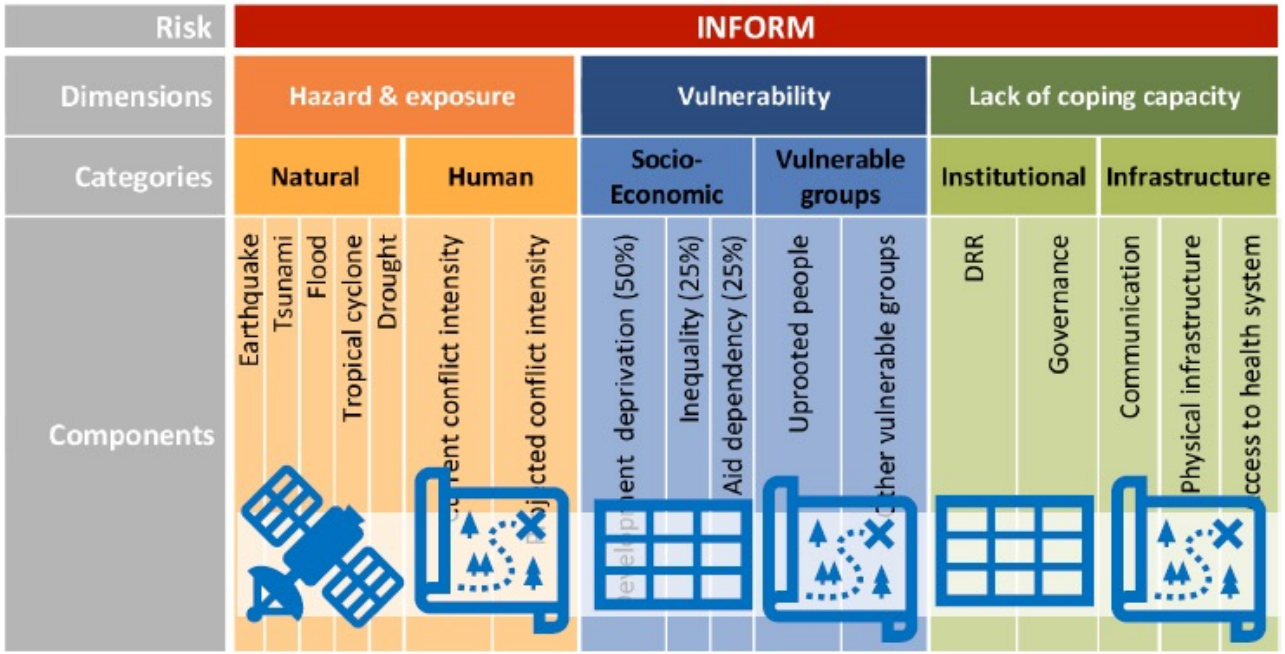
The DSS has been deployed at subnational *ward* level and we are awaiting latest census data to have this updated, vetted by government.



- Earth Observation - Satellite Imagery, Aerial survey
- National Census - Population, Housing
- Modelled geospatial data - Hazard models, gridded population
- Baseline geospatial data – Roads, Admin boundaries, critical infrastructure location etc

Data Analytics Driven Support

What is happening?
Why is it happening?
What areas are affected?
What can we do?



Fiji
Unit: Admin 3 level (Tikina)

Solomon Islands
Unit: Admin 3 level (Ward)

Vanuatu
Unit: Admin 2 level (Area Council)

Multi Criteria Decision Analysis (Demonstration)

Decision Support System
for Enhanced Disaster Risk Reduction

Descriptive | Diagnostic | Multiple Criteria Decision Analysis | Data Quality Assessment

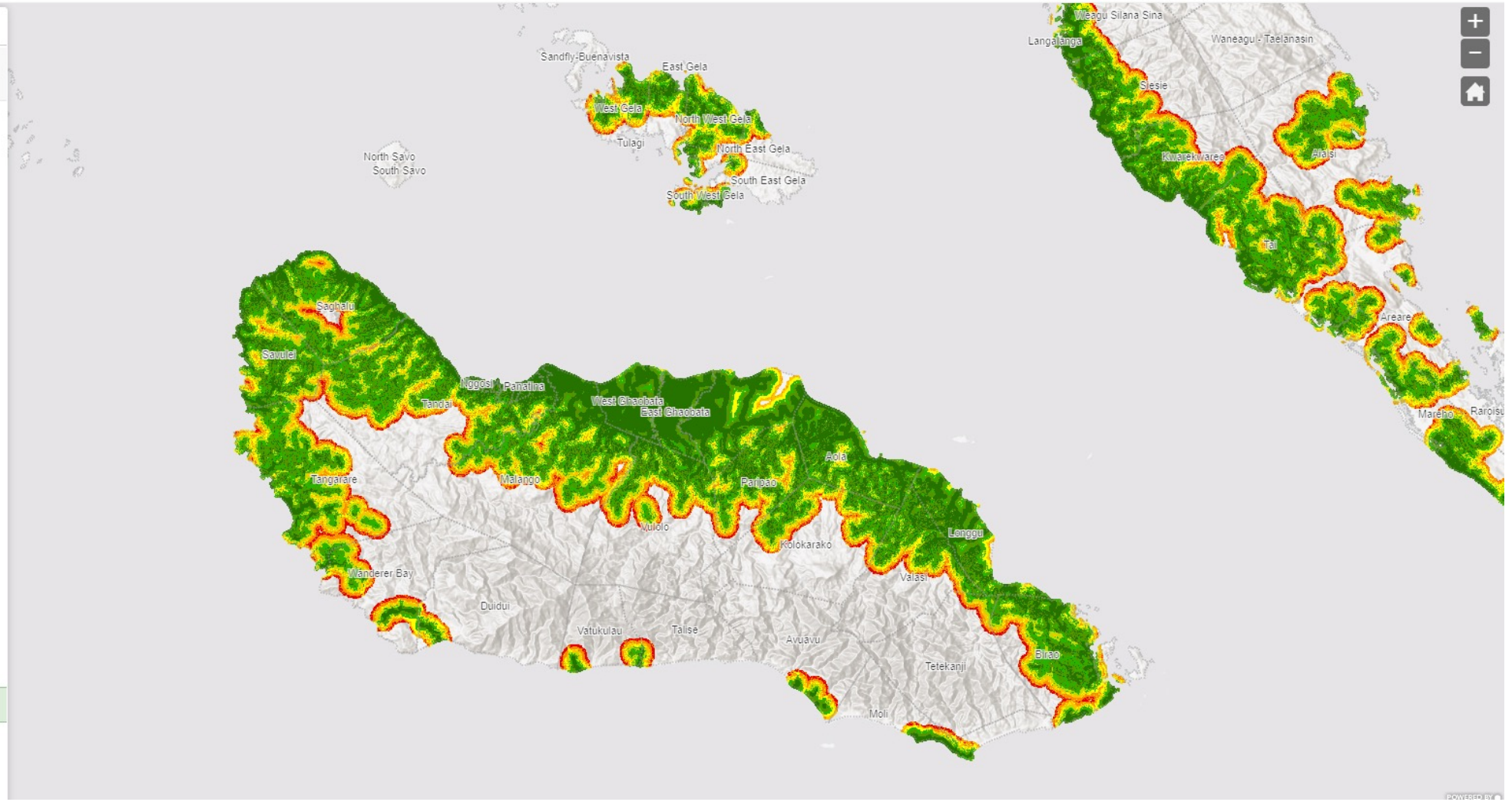
Layers | Model | Chart

2 Design Model Low High

02. Elevation Slope (NASA30m)	30	%
04. Distance to Road (OSM)	70	%

Total: 100 %

Run Clear



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Vinaka!