

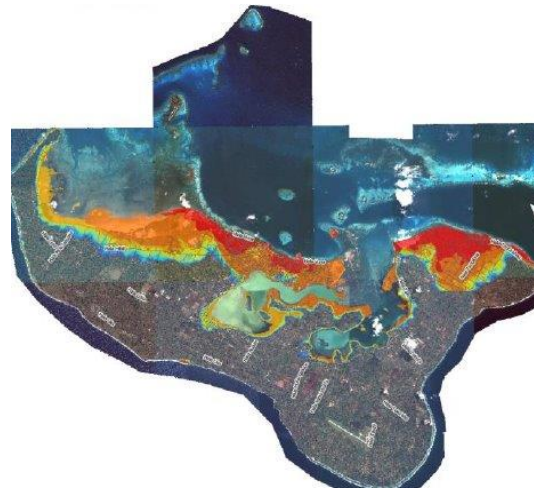


PACIFIC  
DATA  
HUB

PDH is funded by NZ/MFAT

Development of the Nexus platform  
was funded by WB Pacific Resilience  
Program (PREP) I.

Kamsin Raju  
SPC Earth Observation Technical Officer



# Nexus & the Pacific Data Hub

Spatial Data Infrastructure  
for the Pacific Community

# What Did We Need?



Pacific  
Community  
Communauté  
du Pacifique

An SPC-managed integrated data infrastructure that will **support** and **enhance** the **discovery and analysis** of **disaster, risk** and **climate** related data and assets in a consolidated manner.

- Ingest, upload, manage, disseminate and visualize, the following types of disaster, risk and climate related data sets existing within SPC -
  1. **Geospatial Data** incl. Field Survey Data Workflows
  2. Temporal and Statistical Data
- Related **Documents** and **Other Assets**
- Focus on data visualisation by the way of **Dashboards** and **Geostories**
- Deep integration with Pacific Data Hubs, Geoportals and Open Source GIS Ecosystem

# Legacy Platforms



Pacific Community  
Communauté du Pacifique

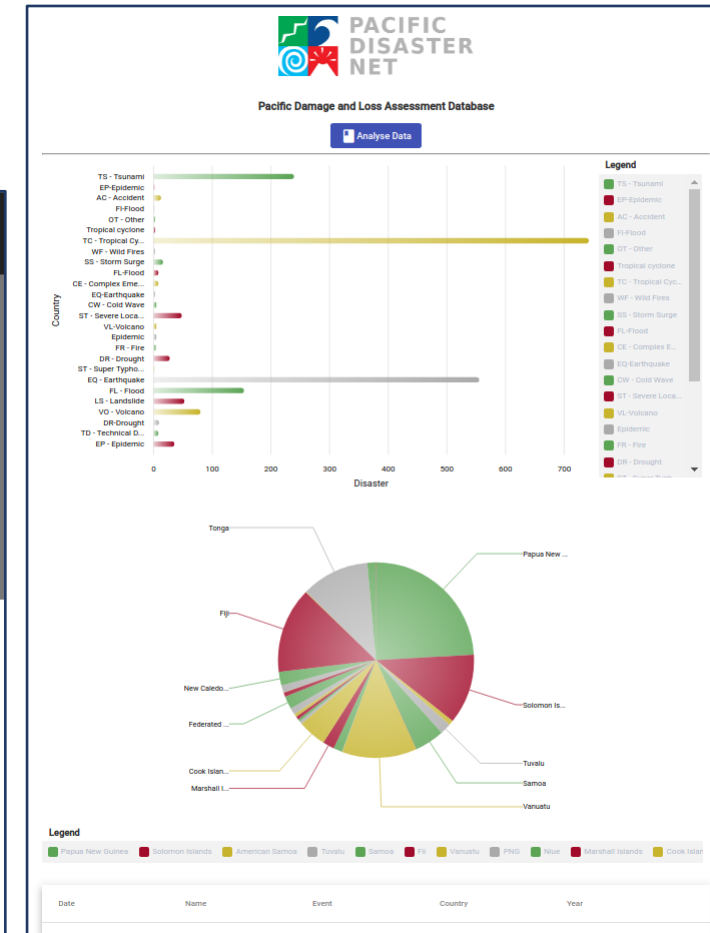
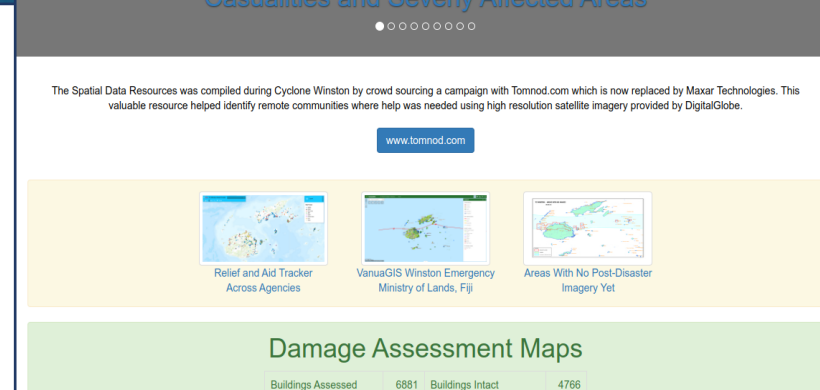
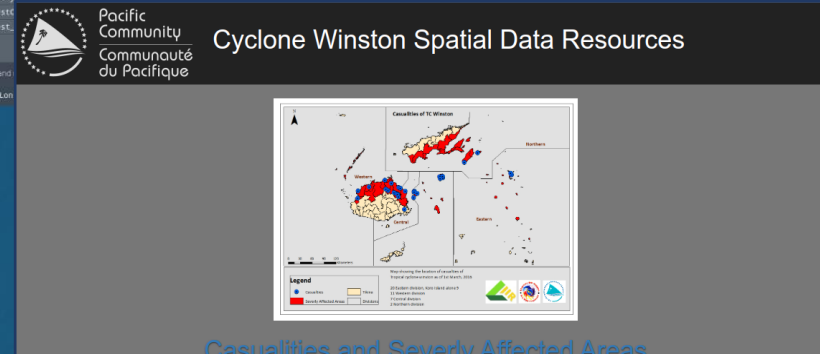
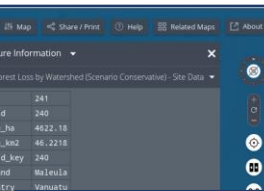
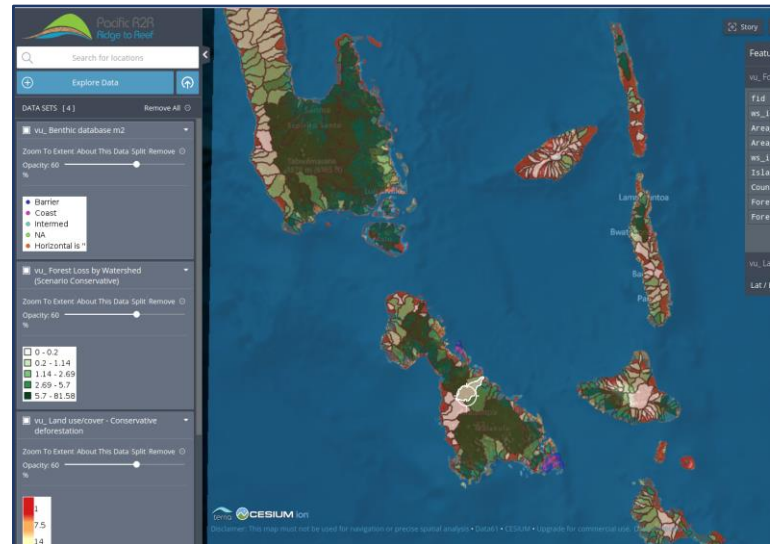
Multiple Spatial Data Infrastructures within SPC and the Pacific deployed and maintained by GEM eg : **Pacific Risk Information System, Ridge to Reef State of Coast Platform, PacGeo**, along with 15 local government deployments across countries since 2010.

<https://risk.spc.int>  
<http://r2r.spc.int>

# Legacy Issues



Pacific Community  
Communauté du Pacifique



- Multiple regional, national and project-specific SDI's proved difficult and too cost-intensive to maintain.
- High turnover within ministries/agencies of trained technical staff meant lack of personnel resources for sustainability of platforms.
- SPC's regional mandate to align data platforms with Pacific Data Hub.

# Adopted Policy



Pacific  
Community  
Communauté  
du Pacifique



1. Open by default



6. Engage user communities



2. Accessible, Licensed, & Documented



7. Develop Strong Institutional Partnerships



3. Co-created



8. Prioritize Open Source



4. Locally Owned



9. Set clear, long-term goals



5. Communicated in ways that meet needs of diverse users

## Open Data for Disaster Risk and Resilience Initiative (OpenDRI)

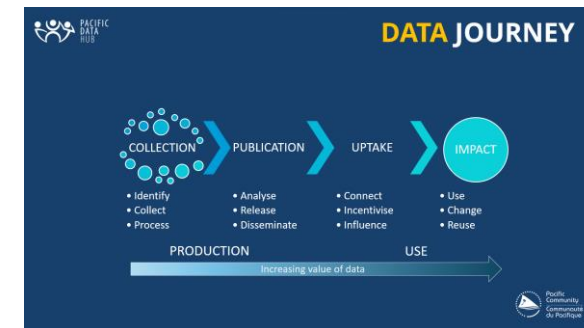
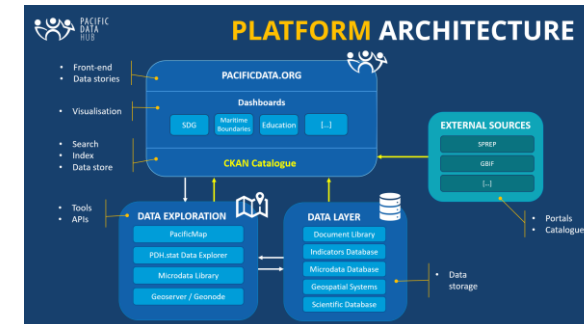
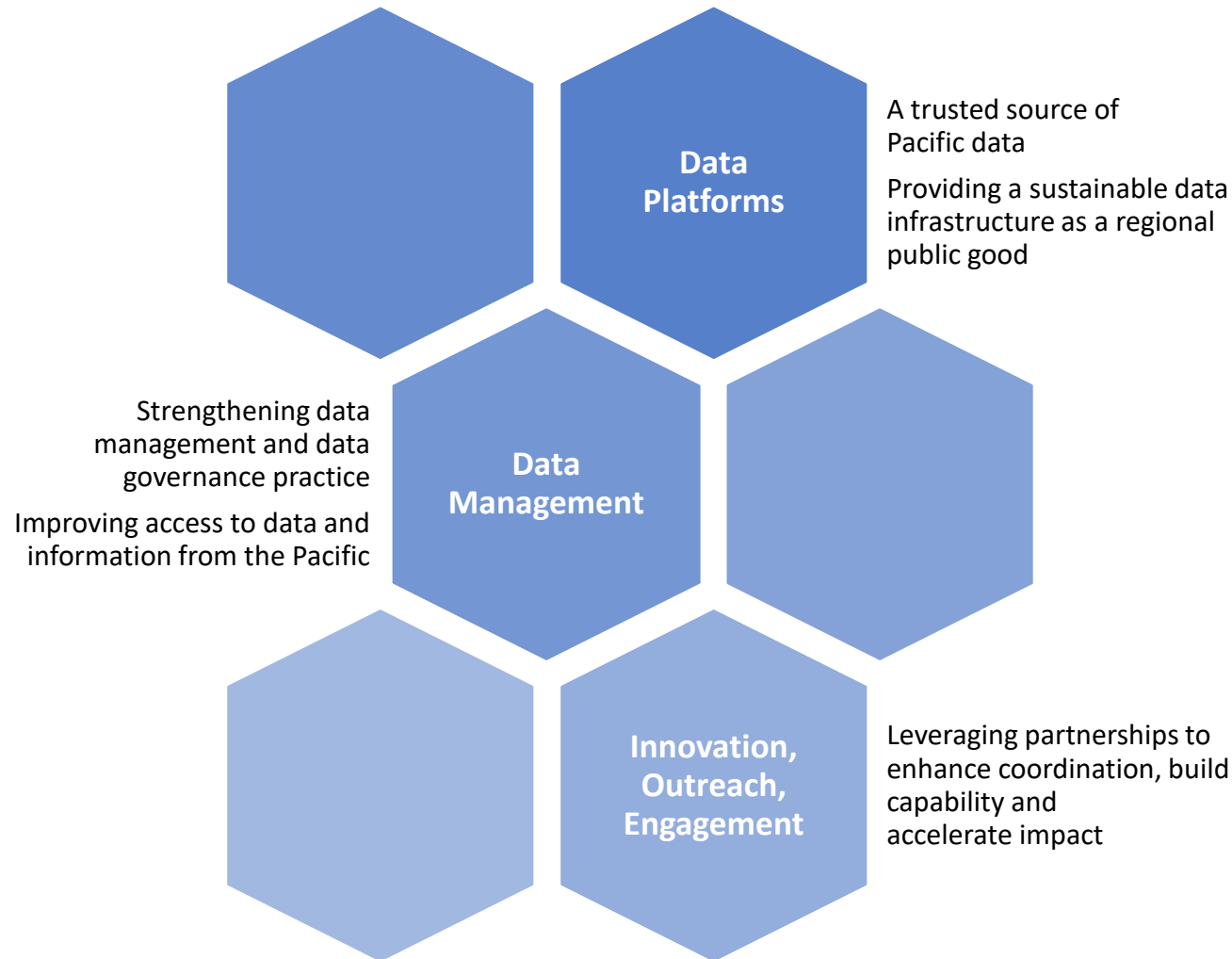
**OPEN DRI** Open Data for Resilience Initiative

*Policy Notes and Principles: OpenDRI by GFDRR, World Bank, May 2016*  
<https://opendri.org/>

# Pacific Data Hub



Pacific Community  
Communauté du Pacifique



**Pacific Data Hub** | **JOIN US**  
FRIDAY 17TH JUNE 2022, 9.30AM - 11.30AM FIJI TIME  
**THE ROLE OF DATA IN TODAY'S DIGITAL ECONOMY**  
A Talanoa session hosted by the Pacific Data Hub and UNCTAD

**SPEAKERS**

- Linda Folia (Central Bank of Solomon Islands)
- Scarlett Fondeur (UNCTAD)
- Hamish Grant (Statistics New Zealand)
- Dr Andrea Giacomelli (Pacific Islands Forum Secretariat)
- Denis Groffis (SPC)
- Viraj Kanti Lal (Bhikha Rai Group)
- David Wardell (SPC)

**MODERATOR**

- David Wardell (SPC)

**Logos:** Pacific Data Hub, Pacific Community, UNCTAD, Stats NZ, Bhikha Rai, etc.

# Pacific Data Hub Integration



Nexus Platform has deep integration with Pacific Data Hub (PDH):

The **Pacific Data Hub (PDH)**, is a central repository of data **about the Pacific** and **from the Pacific**. The platform serves as a gateway to the most comprehensive collection of data and information about the Pacific across key areas including population statistics, fisheries science, climate change adaptation, disaster risk reduction and resilience, public health surveillance, conservation of plant genetic resources for food security and human rights.

1. Deployed on same cloud infrastructure
2. Shares core spatial component (Geoserver)
3. PDH can ingest (meta)/data to/from Nexus (CKAN integration)
4. Nexus can display data on PDH Map Viewer – [map.pacificdata.org](http://map.pacificdata.org)
5. Infrastructure for both is maintained by same service provider
6. Sustainable funding avenues explored by PDH programme



unification and strengthening of SPC data including disaster, risk and climate related data and knowledge hubs

The screenshot shows the Nexus Pacific Community Nexus Platform website. At the top, there is a search bar and a power button icon. The main header features a large image of a lush green mountain landscape with the text "Nexus Pacific Community Nexus Platform". Below the header is a navigation menu with links for Data, Maps, GeoStories, Dashboards, Featured, Alerts, Projects, News, Experts, Home, About, and English. The "Featured" section displays four resource cards:

- Solomon Islands\_Ward\_Annual Averag...**: The expected economic impact due to natural hazards L... by Sachindra Singh. View
- Papua New Guinea: Lae - Topography**: This is a topography mosaic image of Lae located in Pap... by Ulamila\_T. View
- FIJI: MPP Nabutautau Map**: This map contains the resistivity profiles. To view it, user... by Kelerad. View
- Nanikai Settlement**: This is raster dataset showing Nanikai settlement of Tara... by Kelerad. View

Below the featured section, there is a filter bar showing "Filter 3,079 Resources found" and an "Add Resource" button. The main content area displays a grid of resource thumbnails, including maps of Tuvalu and Niue. At the bottom, there are links for gem.spc.int, Developers, and About.

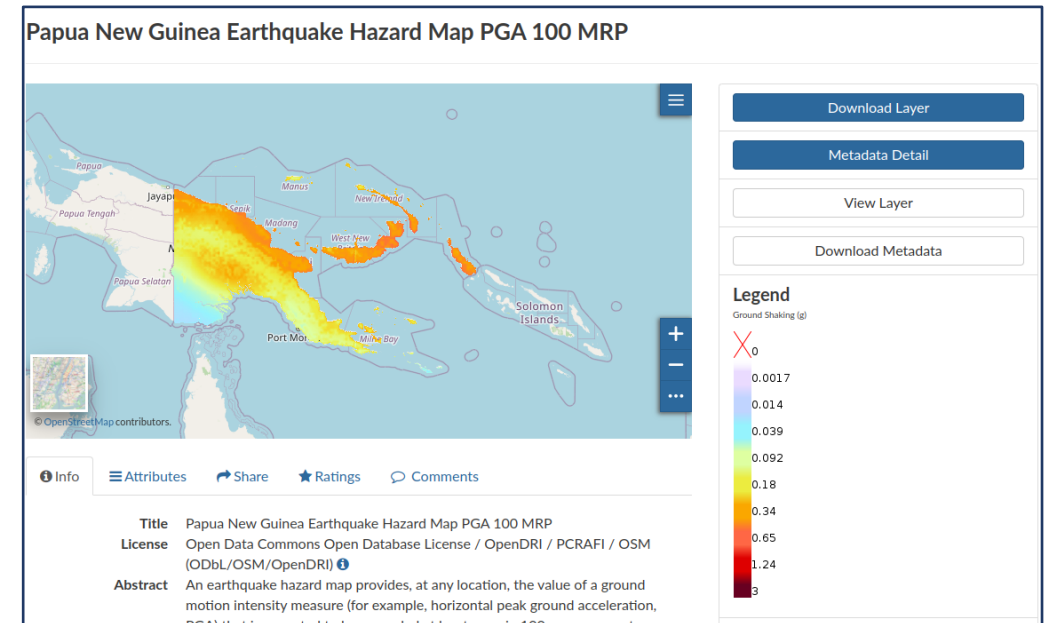
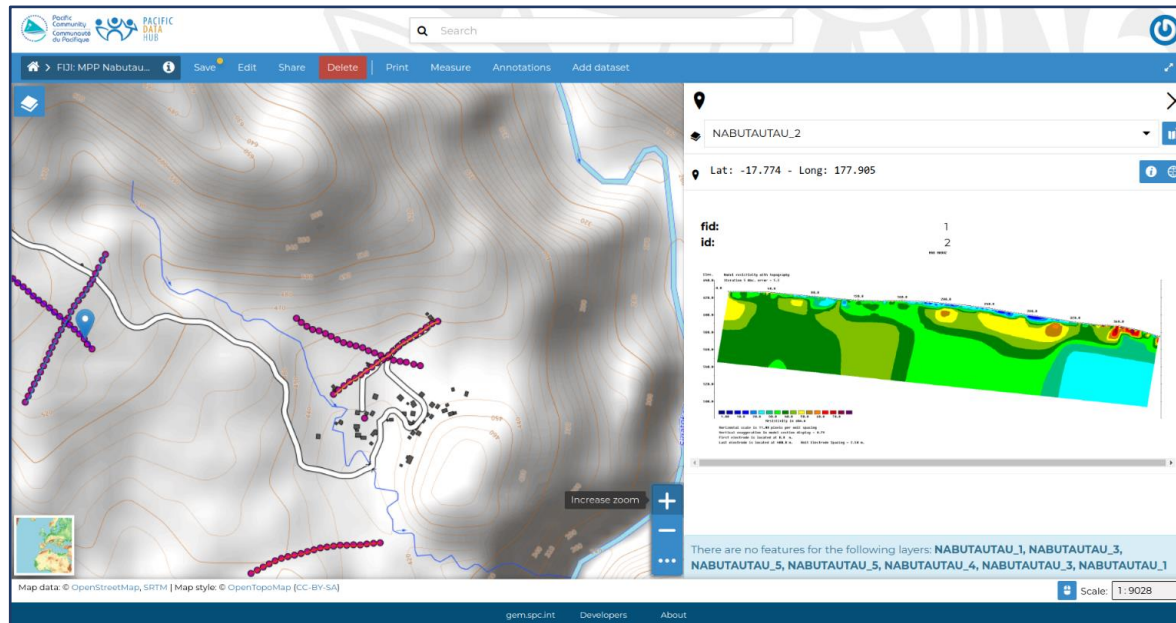


# Harvested Data



Pacific Community  
Communauté du Pacifique

- **Assets and Exposure** data (from PCRAFI Project, Open Street Maps, Field Surveys, RiskScape, etc)
- **Hazards** Models and Maps (Floods, Tsunamis, Tropical Cyclones, Earthquakes etc)
- **Population** Grids (SPC Statistics for Development Division, UN Humanitarian Data Exchange etc)
- **Environmental** Data (Ridge to Reef, MFAT/NIWA Environmental Exposure Assessment Project etc)
- Disaster **Statistics** and Damage Loss Assessments Data
- Water Security (Resistivity Lines)
- Bathymetric Data (Multibeam Surveys)



# Features: Layers and Maps



Pacific Community  
Communauté du Pacifique

The screenshot displays the Pacific Community Data Hub interface. At the top, there is a search bar and navigation links for Home, About, and English. Below the search bar, a navigation menu includes Data, Maps, GeoStories, Dashboards, Featured, Alerts, Projects, News, and Experts. The main content area shows a search results page for 'Federated States of Micronesia' with 2,989 resources found. A left sidebar contains filters for Datasets, Documents, Remote Services, and various metadata fields like Vector, Raster, Remote, Time series, Documents, Maps, GeoStories, and Dashboards. The main grid displays several dataset cards, each with a map thumbnail, title, description, and a 'View' button. The datasets shown include 'Federated States of Micronesia\_bldexp\_modelled', 'Federated States of Micronesia Point Building Expos...', 'Federated States of Micronesia\_Kanso\_Maru', 'Federated States of Micronesia Building Aggregate E...', 'Fiji Average Annual Loss', and 'Fiji\_Tikina\_Bld\_RC'. The footer contains links for gem.spc.int, Developers, and About.

- **Layers** are publishable resources representing a raster or vector spatial data source. Datasets also can be associated with metadata, ratings, and comments.
- **Maps** are comprised of various datasets and their styles. Maps can have both local datasets in GeoNode as well as remote datasets either served from other WMS servers or by web service datasets.

# Features: Documents



Pacific Community  
Communauté du Pacifique



Search



Country Note: Sa... Save Edit Share Download Delete

33bb20d1-4865-4cea-a428-0e7476299d85

1 / 50 | 83% | +



# SAMOA



## Country Note: Samoa

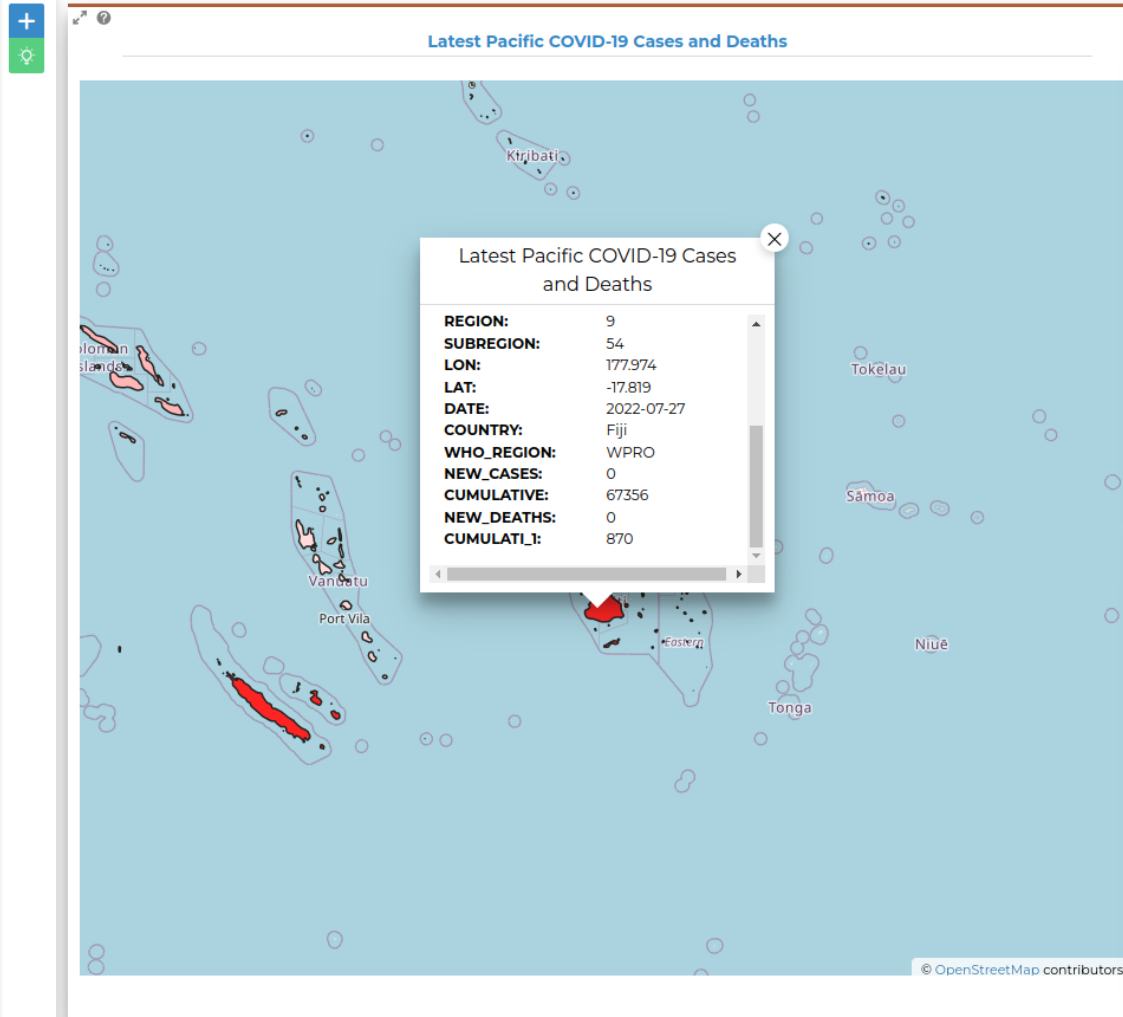
a document from Sachindra Singh / March 11th 2022

Samoa is composed of two large volcanic islands (Upolu and Savai'i) and several smaller islands. Samoa is exposed to tropical cyclones, floods, earthquakes, tsunami, volcanic eruption, and drought.

Info

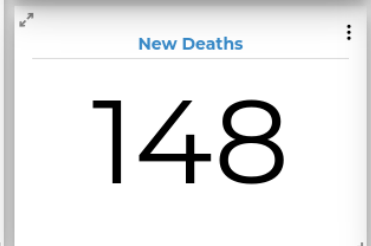
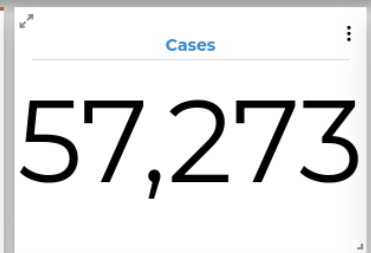
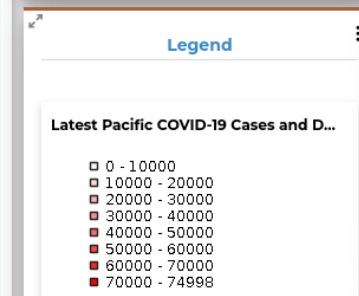
<b>Title</b>	Country Note: Samoa
<b>Abstract</b>	Samoa is composed of two large volcanic islands (Upolu and Savai'i) and several smaller islands. Sam <a href="#">Read More</a>
<b>Owner</b>	Sachindra Singh
<b>Created</b>	July 27th 2022
<b>Published</b>	March 11th 2022
<b>Last Modified</b>	July 27th 2022
<b>Resource Type</b>	document
<b>Keywords</b>	pcrafi
<b>Regions</b>	Global
<b>Point of Contact</b>	Sachindra Singh
<b>Language</b>	eng

# Features: Dashboards



NAME	POP2005	NEW_CASES	CUMULATIVE	NEW_DEATHS	CUMULATI_1
American Samoa	64,051	0	7,471	0	33
Australia	20,310,208	46,442	9,185,633	104	11,304
Cook Islands	13,984	44	5,892	0	1
Fiji	828,046	0	67,356	0	870
French Polynesia	255,632	0	74,998	0	649
Guam	16,857	0	45,362	0	377
Kiribati	92,003	0	3,430	0	13
Marshall Islands	5,672	0	59	0	0
Micronesia, Federa	110,058	0	2,072	0	1

24 Items



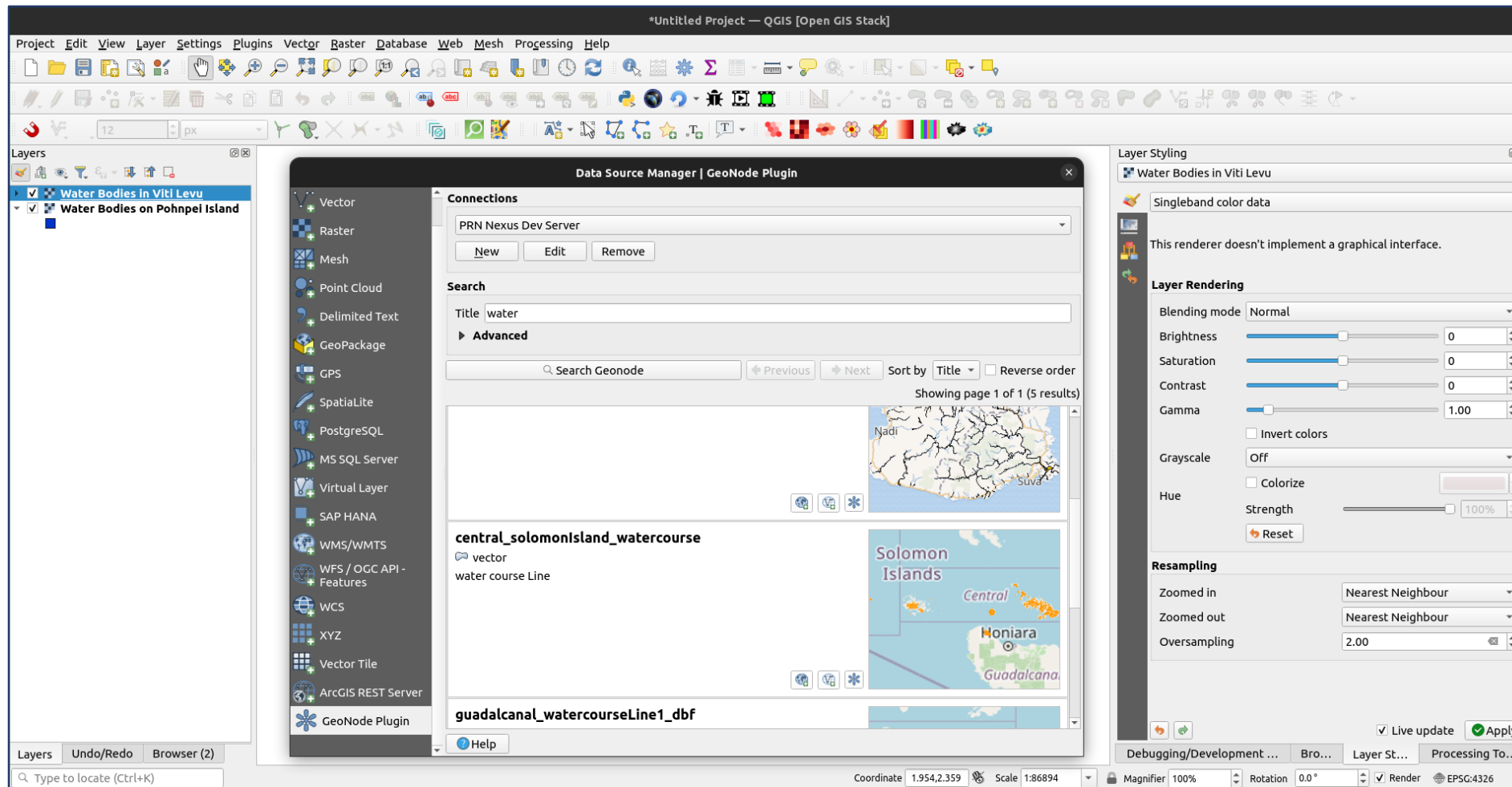
**COVID-19 Pacific Data**

The WHO coronavirus (COVID-19) dashboard presents official daily counts of COVID-19 cases, deaths and vaccine utilisation reported by countries, territories and areas. Through this dashboard, we aim to provide a frequently updated data visualization, data dissemination and data exploration resource, while linking users to other useful and informative resources.

# Features: Nexus QGIS Plugin



Pacific Community  
Communauté du Pacifique



This plugin was being created as an activity of the PREP/Nexus project, commissioned by the The Pacific Community (SPC) and with funding from the [World Bank]. Its goal is to develop a QGIS-based client for Nexus that allows GIS users to more easily integrate GeoNode into their workflows.

# Current/ Ongoing Updates



Pacific  
Community  
Communauté  
du Pacifique

- Data already available on the platform:
  - **Assets and Exposure** data (from PCRAFI Project (partial), Open Street Maps, Field Surveys etc.)
  - **Hazards** Models and Maps (Floods, Tsunamis, Tropical Cyclones, Earthquakes etc.)
  - **Population** Grids (SPC Statistics for Development Division, UN Humanitarian Data Exchange etc.)
- Version updates to the Nexus platform
- Capacity building for various country experts through PARTner 2's in-country workshops.
- Integration of RiskScape Outputs
- Improving and maintaining metadata



# 2024 Snapshot of OSS GIS Capacity Building



Pacific  
Community  
Communauté  
du Pacifique

Type	Participants Training	Countries	Division
QGIS for Surveys and Census	30	5	SDD
Stats Spatial Data Processing with R	20	4	SDD
Qfield	95	7	GEM/LRD
GeoNode	140	6	GEM
Digital Earth Pacific	71	6	GEM
Riskscape	140	6	GEM

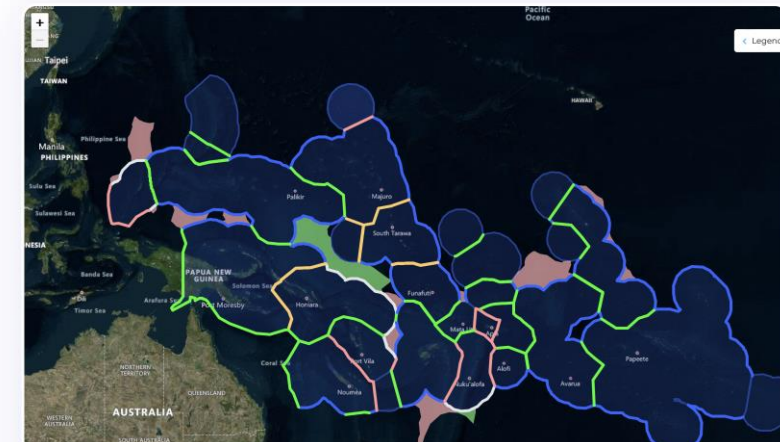
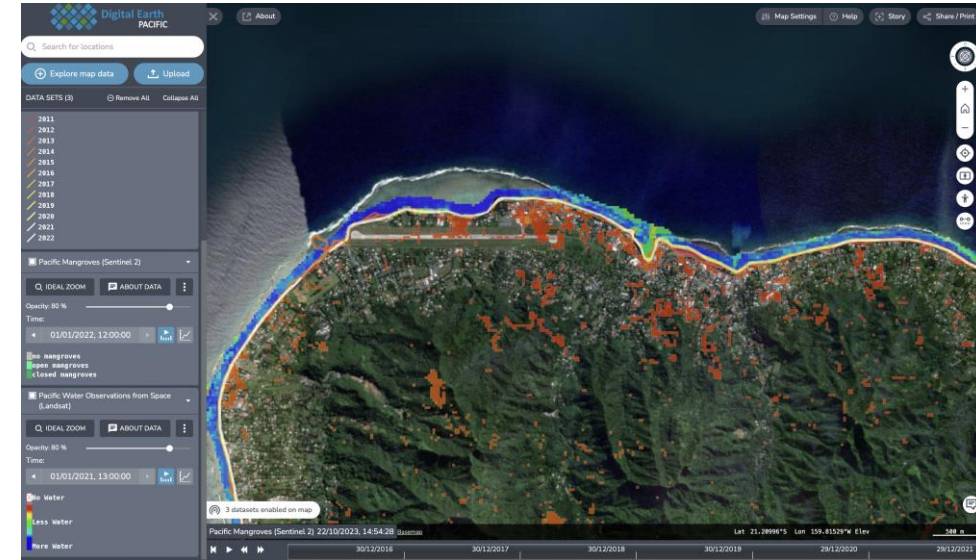
# Current Integrations



Pacific Community  
Communauté du Pacifique

Supports and serves as a data dissemination platform for:

- Digital Earth Pacific outputs  
(eg: landcover, flood maps, building footprints, coastline change)
- Maritime Boundaries Dashboard
- Marine Spatial Planning Projects
- Population Grids
- PartNER 2
  - RiskScape Outputs - Model Outputs and Loss Table
  - Capacity building trainings





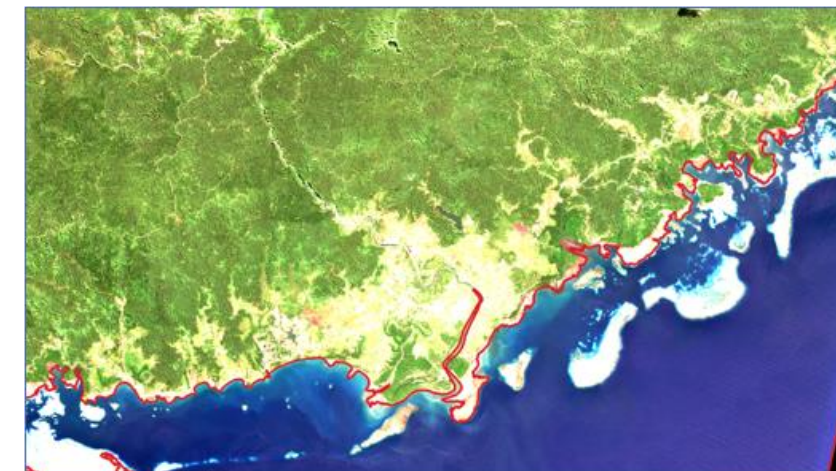
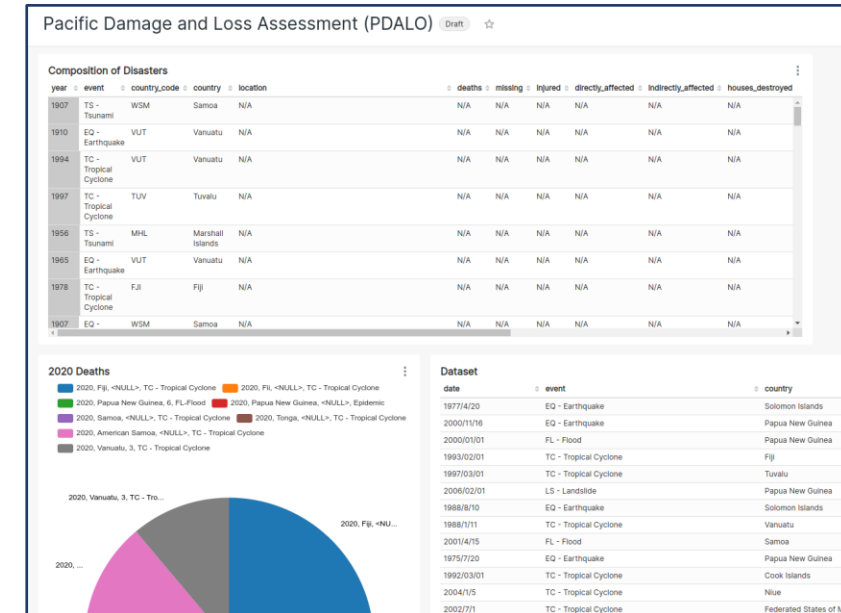
# Future Integrations



Pacific Community  
Communauté du Pacifique

Strengthen and centralize data offering:

- SPC Thredds  
(Ocean/Meteo Data Observations and Products)
- UN HDX Data  
(Disaster Response, Planning Data)
- Pacific Data Loss Assessment and Analysis (PDalo)  
(Disaster Statistics, e.g. displacement data)
- Aggregated Damage/Loss Models (PCRIC)
- PartNER 2 RiskScape Outputs  
(Model Outputs and Loss Tables)





Pacific  
Community  
Communauté  
du Pacifique

Thank you

[pacificdata.org](http://pacificdata.org)  
[nexus.pacificdata.org](http://nexus.pacificdata.org)

The screenshot displays the metadata management interface for a dataset. The top navigation bar includes 'Home', 'Organizations', and 'Workspace'. The breadcrumb trail shows 'Workspace > title > metadata'. The main content area is divided into four numbered sections: 1. Basic Metadata (Thumbnail), 2. Location and Licenses, 3. Optional Metadata, and 4. Dataset Attributes. The 'Basic Metadata' section shows a thumbnail of a map and an 'Edit' button. The 'Optional Metadata' section includes a 'Free-text Keyword' field and a 'Date' field set to '2021-01-23 23:00'. The 'Dataset Attributes' section shows a 'Category' dropdown set to 'Society' and a 'Group' dropdown set to 'Group1'. A sidebar on the left contains a menu with sections: Resources (My datasets, My documents, My maps, Shared with me, Pending approval), Messages (Inbox, Notifications), Accounts (Users, Approve), and Remote sources (Manage, Status). On the right, a 'View / Edit / Download' panel contains buttons for 'Edit Metadata', 'Share', 'Clone', and 'Delete'.