

A satellite view of Earth from space, showing the Pacific Ocean, parts of Asia, Australia, and the Americas. The image is a composite of satellite data, showing cloud patterns and landmasses. The text is overlaid on the left side of the image.

The future of Earth Observations for Pacific Island nations

Rafael Kargren



Pacific Island Countries (including EEZ's)

Volcanic eruption in Tonga



EMSR558 - AoI01 Nuku'Alofa
 Area Of Interest (AoI01)

- Built Up Grading
- Damaged
 - Destroyed
 - Possibly damaged



Digital Earth PACIFIC

▼

▼

▼

Reset

side by side from Sentinel-2

find data ▼

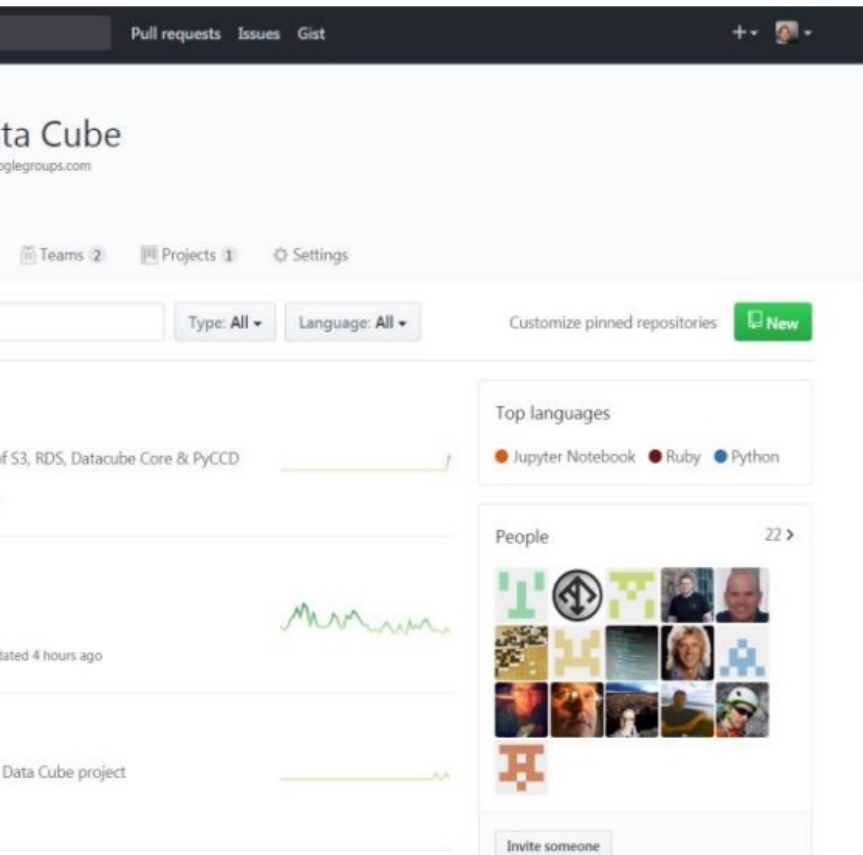
that matched your search. ⓘ

- 2A_20211128T233809_R087_T
211129T172127
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21 6.6% ☁
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211114T074317
21 8.5% ☁



Navigation controls including a home icon, zoom in (+), zoom out (-), a location pin icon, a search icon, and a settings icon.

Data Cube: Platform for gridded data analysis and integration



OpenStreetMap Data for Pacific Island countries Now Available on the Pacific Environment Portal:

pacific-data.sprep.org





OpenStreetMap Fiji

Mapathon

Online | 26th May 2021 | 2pm - 4pm (FJT)

We are looking at building a local community of mappers online!

Join us as we map the unmapped.

OSM Fiji is supported by the HOT Community Impact Microgrant



Humanitarian
OpenStreetMap
Team



Disaster Risk Management and Climate Resilience

Web Based Solutions

United Nations Satellite Centre UNOSAT | UNITAR





Pacific Needs

- Land
- Marine
- Freshwater
- Food security
- Operational Surveillance
- Disaster Risk Reduction



Land



Purpose

Make land use cover and potential information available for Pacific

Needs

- Availability and access to data
- Availability of finer spatial and spectral resolution data for small island monitoring

Issues

- Sovereignty of data.
- Hard to secure contributions or commitment from key actors.



Marine



Purpose

Empower Pacific Island people and develop more resilience for coastal and marine environments.

Needs

- Identify appropriate indicators for monitoring, which will help identify the required data sources
- Identify what issues can be addressed with earth observation data.

Issues

- Current lack of local statistics.
- Identify stakeholders and address a range of audiences.
- Engagement in common work.
- Identify appropriate technology, as currently not well-adapted.
- Limitations of satellite imagery for productivity analysis.



Fresh Water

Purpose

Leverage EO to improve water security quality and quantity for Pacific countries.

Needs

50% of residents lack access to safe drinking water, with both quantity and quality being important.

Issues

- Large regional differences
- Satellite and other measurements are not being used



Food Security

Purpose

To use and leverage available data for food security.

Needs

- Need for data on food crops and better use existing of data.
- Analytics to identify and monitor land cover, rainfall, temperature, and sea level measurements are required and maps need to be available regularly.
- Sub-meter (commercial) resolution required
- Need for identification of baseline changes and changes over time.

Issues

- Understand how to better use and access the available data.
- Understanding what variables will impact crops
- Crop types and scale is unique to the region



Surveillance

Purpose

To better integrate EO science in the marine domain to improve sovereignty and security

Needs

A centralised data repository

Issues

- National sovereignty is a key concern, around vessel tracking (IUU fishing).
- Governance issues fit into larger structures and regional organisations.
- Data sharing regulations - what can be shared with, who and how?
- How to track small vessels? Is different technology required?



Disaster Risk Reduction

Purpose

How best to manage disasters in a coordinated way.

Needs

- Historical context.
- Forecasting
- Communications
- Readiness
- Ethical and legal responsibility for providers.
- The need for audience relevant information.

Issues

- Uncoordinated, late efforts for outdated and not useful data



Challenges



TECHNICAL



COMMUNICATION



COLLABORATION



EDUCATION



How do we make this happen?

