



Pacific  
Community  
Communauté  
du Pacifique



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Geoscience, Energy and Maritime Division

**Andrick Lal, Oceans & Maritime Programme**

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**18<sup>th</sup> February 2021**

**Fiji Geospatial Information Council Meeting**

**Pasifika Conference Room, Lotus Building, Nabua, Fiji**



**26 Pacific  
Countries and  
Territories**

**42 million  
people**

**42 million  
square  
kilometres**

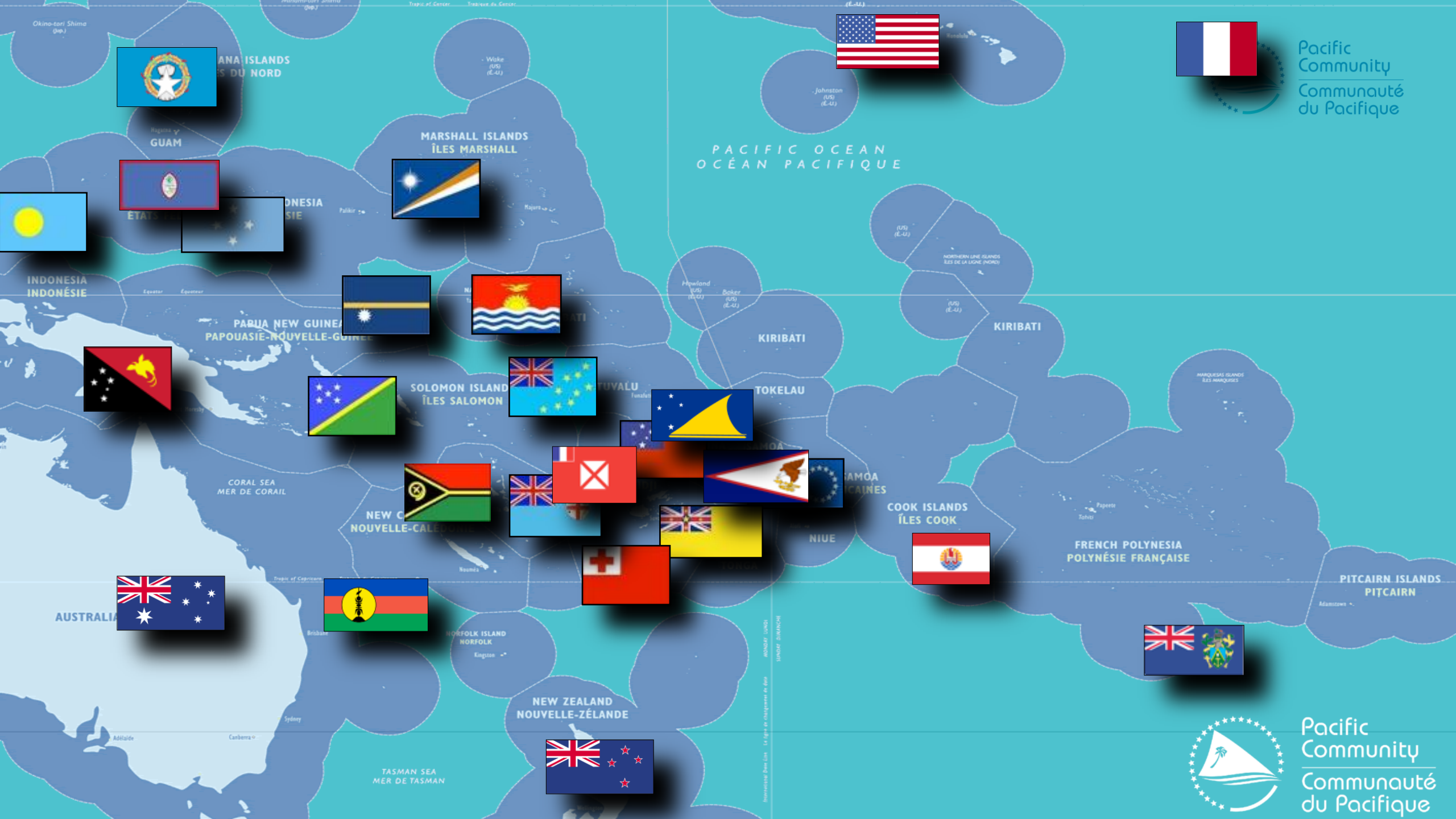
**30% of the  
world's  
Exclusive  
Economic  
Zones**



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**Resilient  
Boundaries for  
the Blue Pacific**



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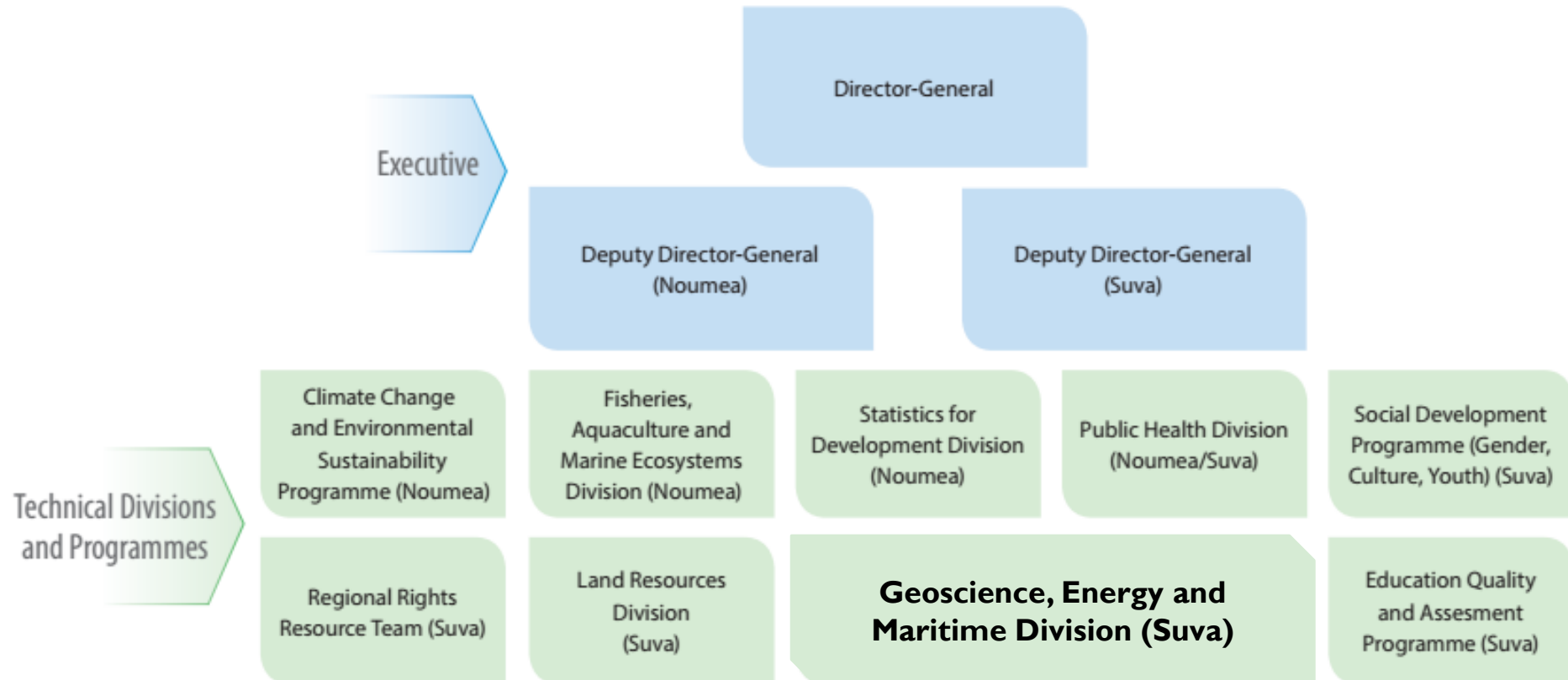
# The Pacific Community SPC

## Pacific owned, Pacific led.



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*SPC is the principal scientific and technical organisation in the Pacific region, proudly supporting development since 1947. We are owned and governed by our 26 country and territory members who we serve.*





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## KEY AREAS



Integrated Disaster and Climate Resilience



Ocean Science



Maritime Affairs  
and Safety



Water and  
Sanitation



Earth & Marine  
Observations



Sustainable  
Georesources



Sustainable Energy Security



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# Earth and Marine Observation



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Direct technical  
support to work  
across GEM Division  
and other SPC  
Divisions



GeoInformatics, GIS,  
Remote Sensing for  
decision making



Geospatial data  
and knowledge  
management for both  
users and technical  
teams



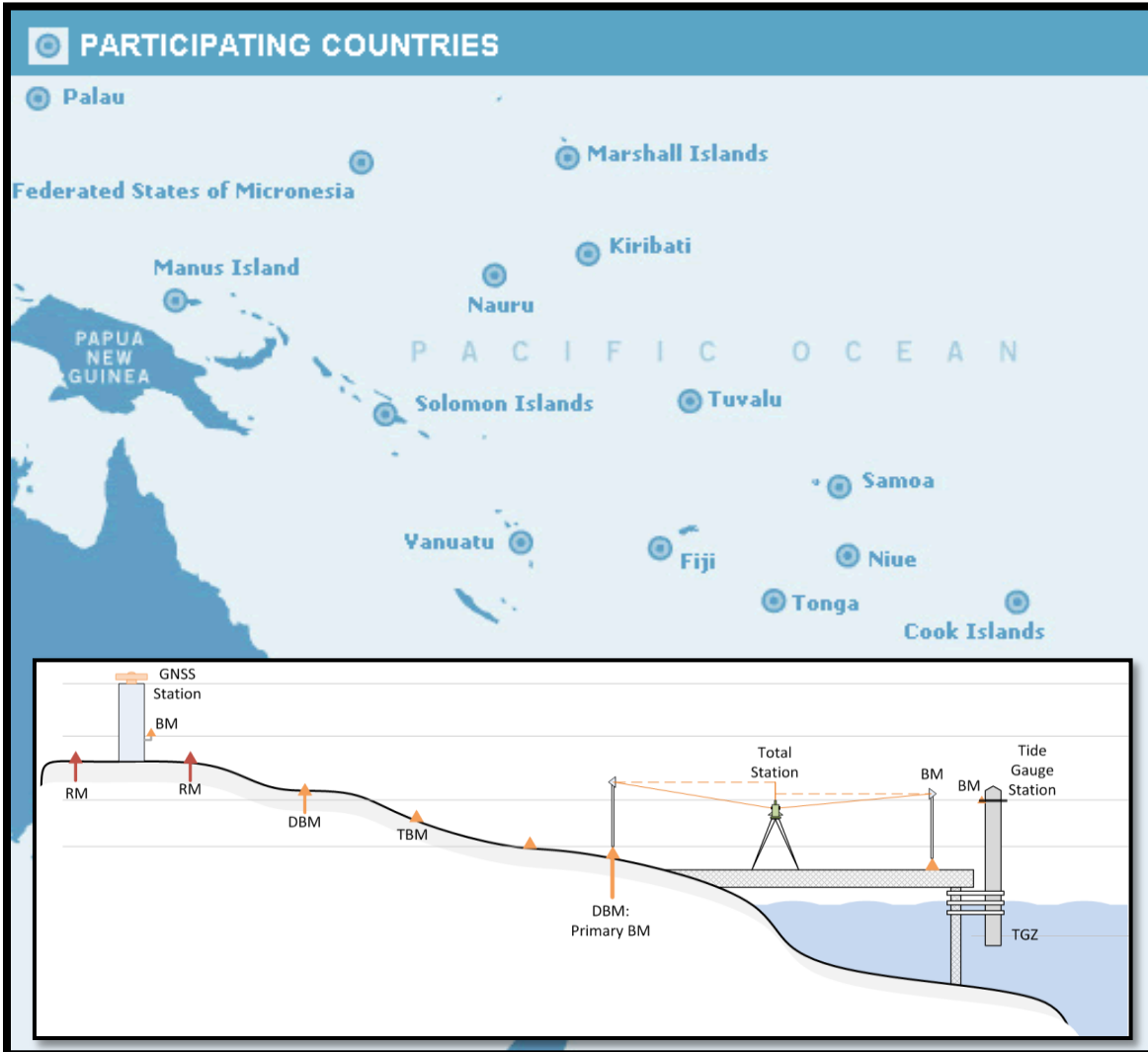


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# Earth Observations

## Monitoring Surveys



**GNSS COR Station**



**Tide Gauge Station**



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Climate and Oceans Support  
Program in the Pacific



Australian Government  
Bureau of Meteorology



NEW ZEALAND  
FOREIGN AFFAIRS & TRADE  
Aid Programme



Climate, Freshwater & Ocean Science



Australian Government  
Geoscience Australia





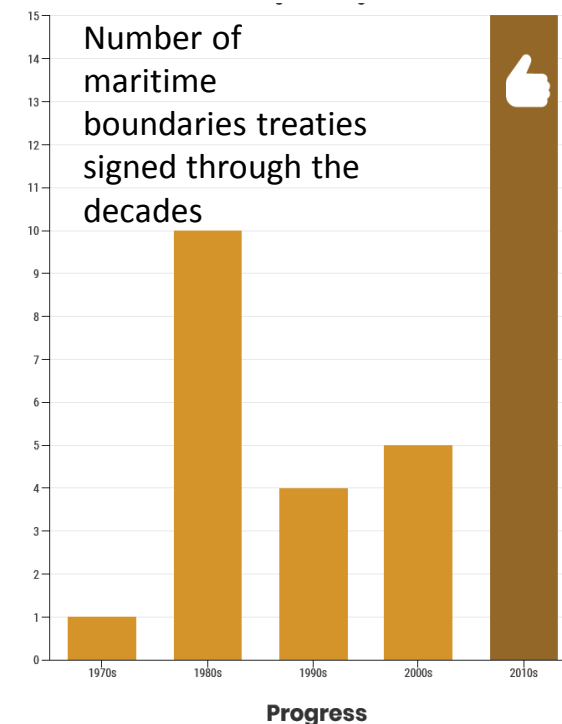
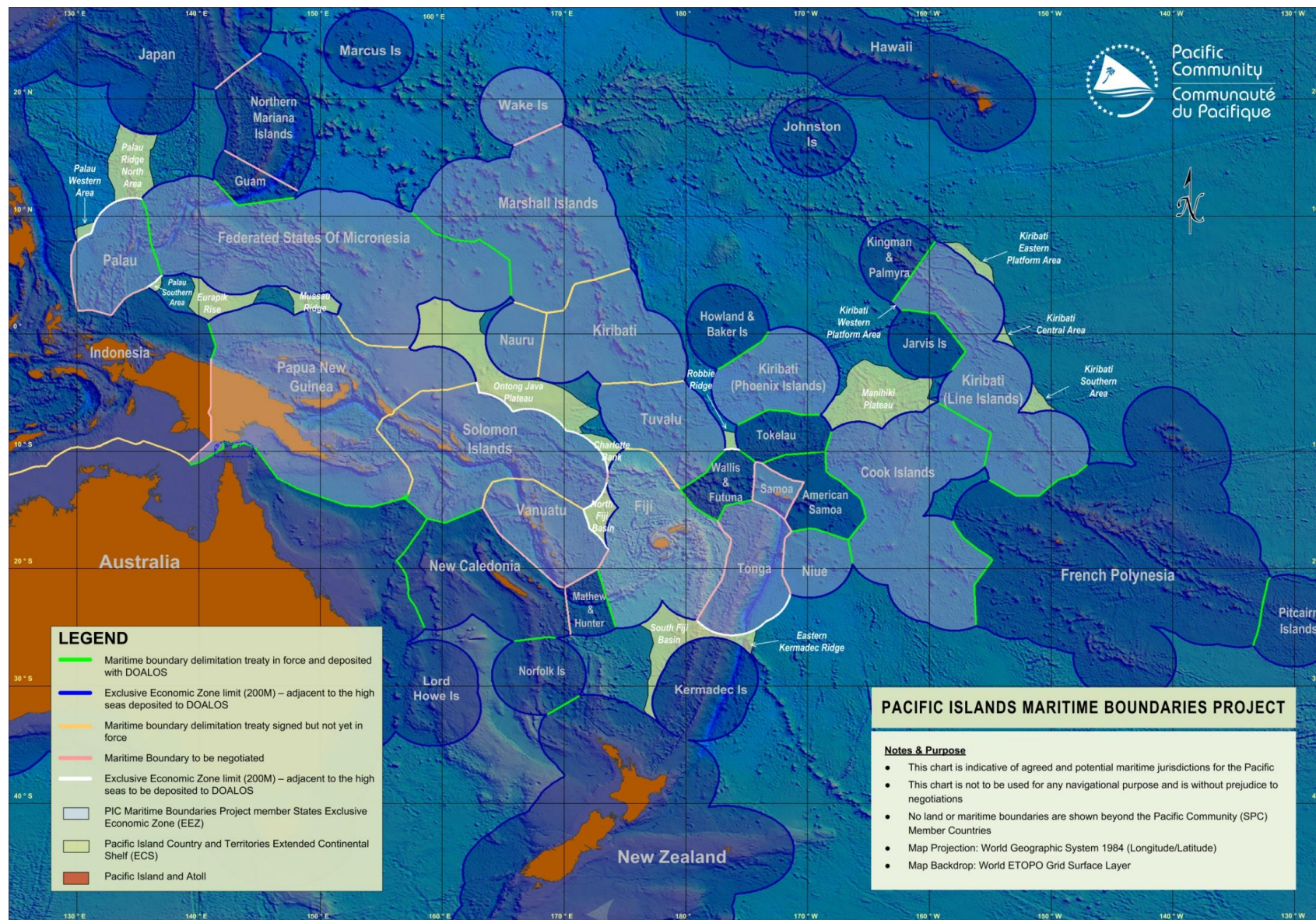
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# Maritime Security



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The number of treaties signed has increased in response to strengthened regional cooperation

## PACIFIC ISLANDS MARITIME BOUNDARIES PROJECT

### Notes & Purpose

- This chart is indicative of agreed and potential maritime jurisdictions for the Pacific
- This chart is not to be used for any navigational purpose and is without prejudice to negotiations
- No land or maritime boundaries are shown beyond the Pacific Community (SPC) Member Countries
- Map Projection: World Geographic System 1984 (Longitude/Latitude)
- Map Backdrop: World ETOPO Grid Surface Layer





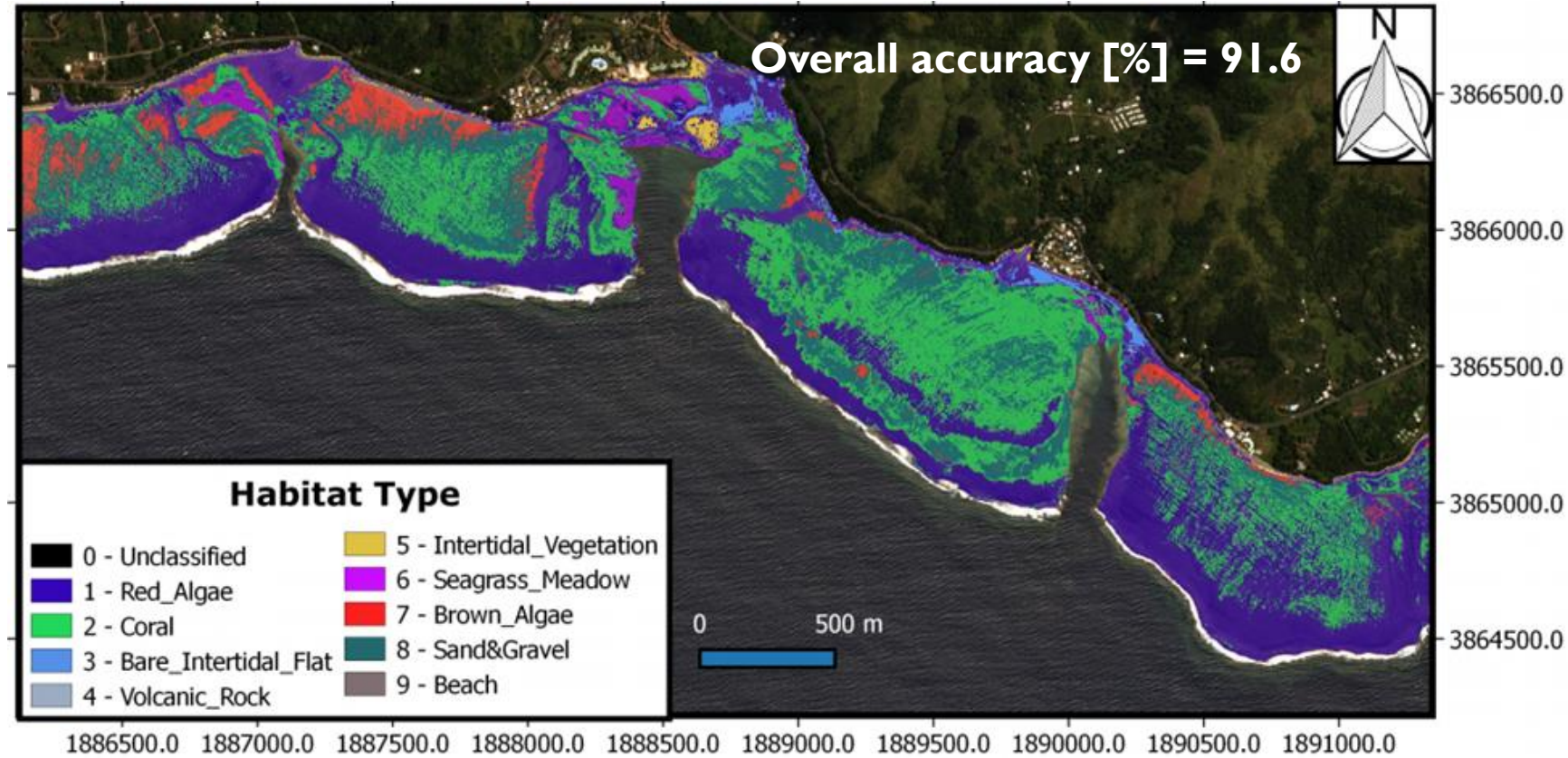
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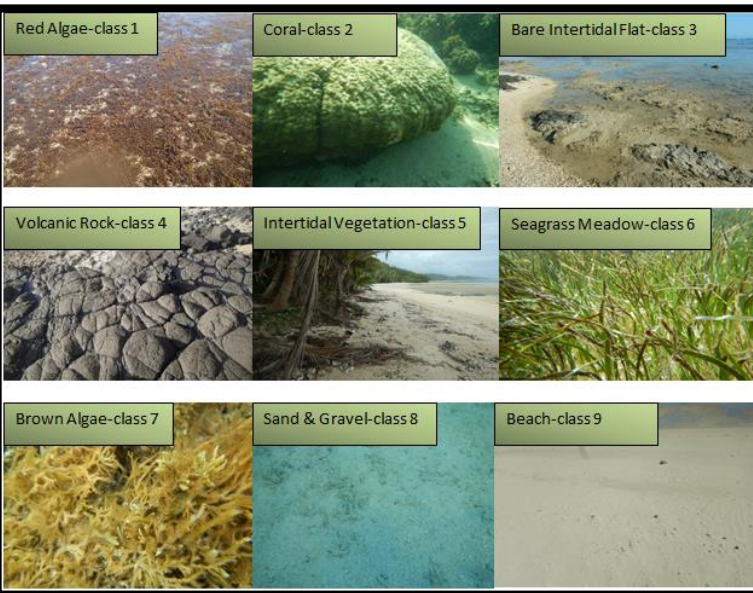


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# MARINE HABITAT MAPPING USING SEMI-AUTOMATIC CLASSIFICATION



Habitat Map of Komave, Coral Coast, Fiji







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# Integrated Disaster and Climate Resilience



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Oceans and Maritime  
Governance



Safe and Sustainable  
Maritime Transport



Ocean and Maritime  
Capacity and  
Understanding





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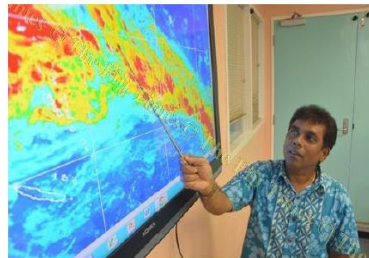
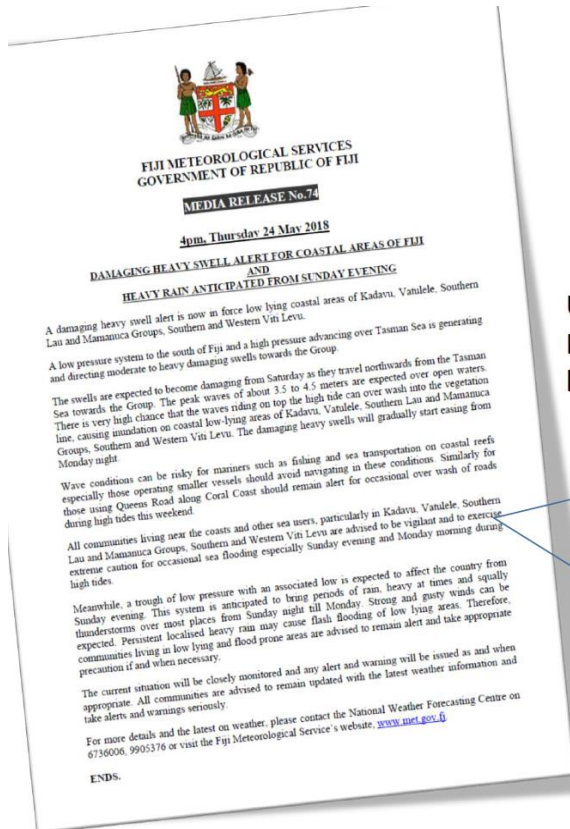
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# Development of Innovative and Tailored Inundation Forecast Systems



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## Fiji Met Service now issues impact-based forecasts

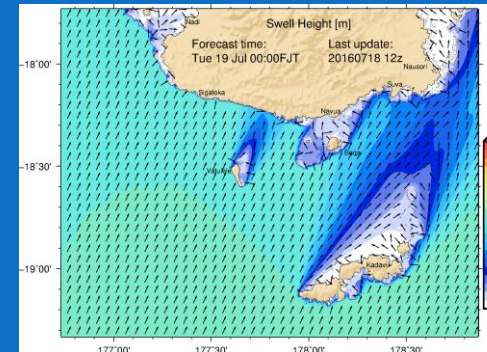


User-focused communication, 24 May:  
Impact-based forecasting, that includes  
hazard and vulnerability information

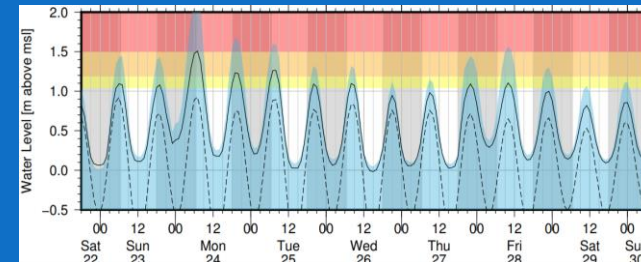
*"There is very high chance that the waves riding on top the high tide can over wash into the vegetation line, causing inundation on coastal low-lying areas"*

*"Similarly for those using Queens Road along Coral Coast should remain alert for occasional over wash of roads during high tides this weekend."*

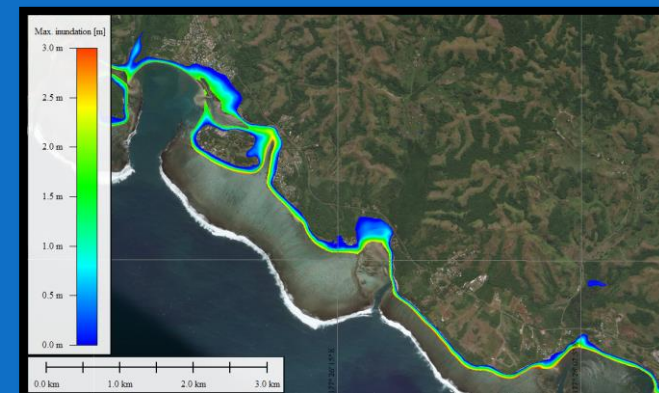
Timely, Accurate and Actionable information



Offshore  
wave  
forecast



Water  
Level  
forecast at  
the shore



Inundation  
Forecast





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# Maritime Affairs & Safety



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Oceans and Maritime  
Governance



Safe and Sustainable  
Maritime Transport



Ocean and Maritime  
Capacity and  
Understanding





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# Sustainable maritime transport & safe navigation



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**>90%** of  
goods carried  
by sea  
**>14,000**  
calls  
**2000+**  
domestic  
vessels >15 m

Safe and sustainable mobility of people  
and goods in the Pacific Region







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# Ocean Science



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Good ocean  
governance including  
maritime boundaries,  
technical and legal  
support



Strengthened Ocean  
and Coastal Monitoring  
and Prediction  
Services



Improved Ocean  
Literacy for more  
informed decision-  
making





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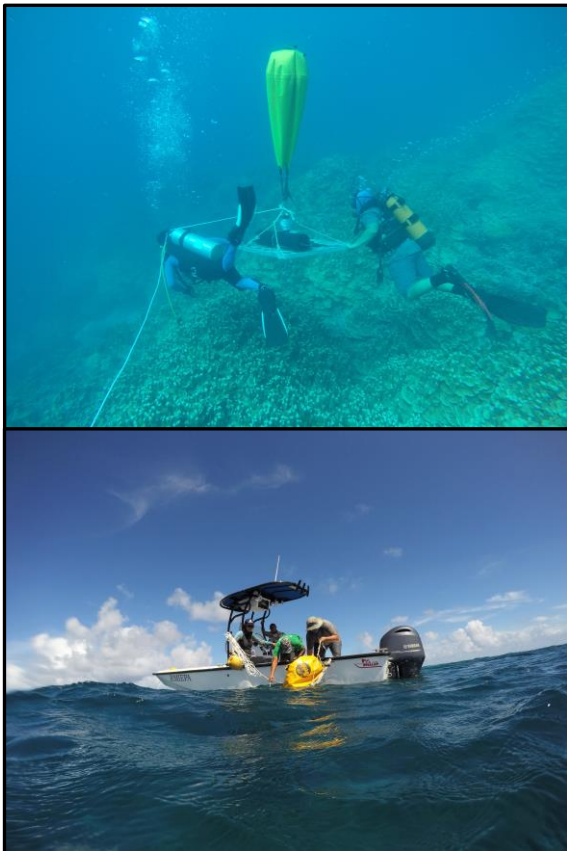
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# Ocean Science

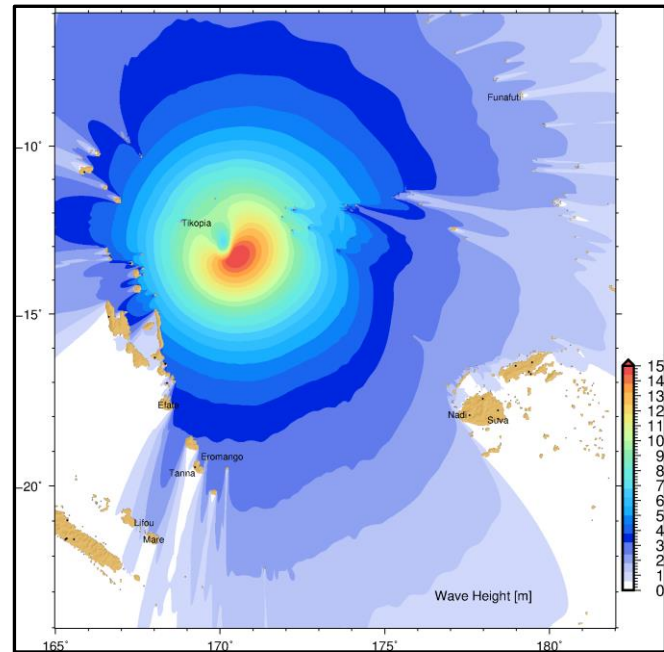


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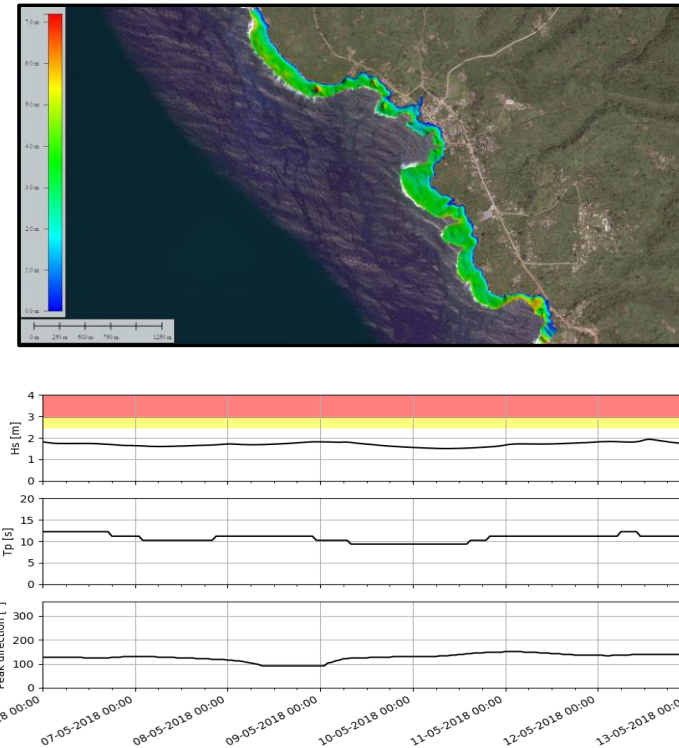
## Coastal monitoring



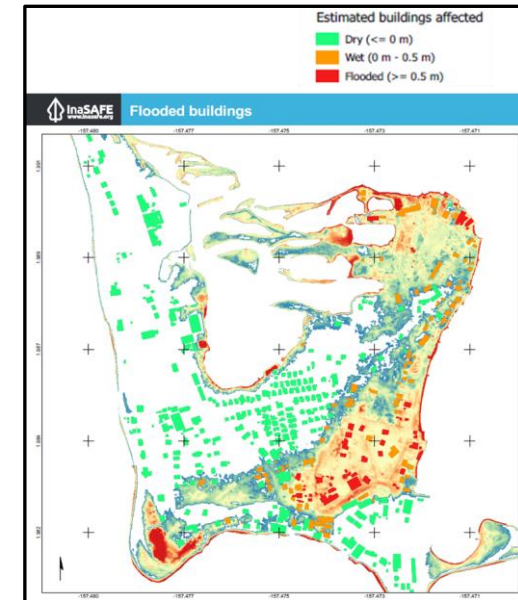
## Development of numerical models



## Coastal hazard assessments and early warning systems



## Risk assessments







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# Sustainable Energy Security



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Energy Planning,  
Policy & Regulatory  
Support for Members



Renewable Energy  
Initiatives



Energy Data and  
Information including  
analysis of Petroleum  
& Alternative Liquid  
Fuels



Stakeholder  
engagement & Private  
Sector Support



# Activities for 2021

## Energy

- Implement the FSM Sustainable Energy and Accompanying Measures for Renewable Energy and Energy Efficiency (FSM SEAM REEE)
- Complete and launch the regional Framework on Energy Security & Resilience in the Pacific (FESRIP) 2021 – 2030
- Conduct National Trainings for private sector on tendering and contract management for Palau, Samoa, and Vanuatu
- Conduct regional training on energy efficiency in land transport



Energy Planning,  
Policy & Regulatory  
Support for Members



Renewable Energy  
Initiatives



Energy Data and  
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Stakeholder  
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# Sustainable Georesources



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Data baselines,  
modelling and analysis  
of georesources



Understanding  
natural resource  
management  
including water &  
development minerals



Testing of resource  
quality



Science informed  
information for  
decision makers





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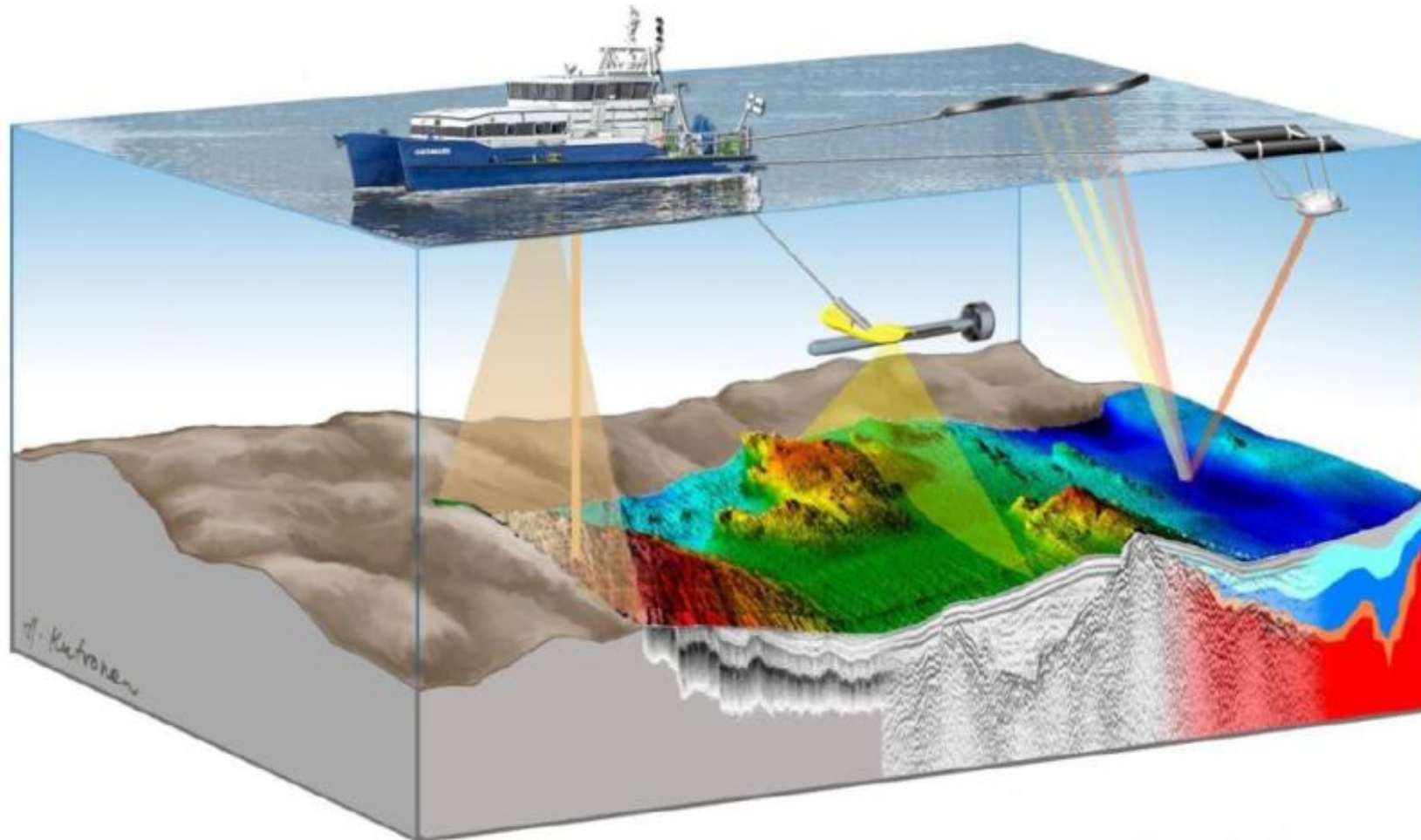
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# Mapping Georesources



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Single-beam and Multi-beam echo sounders, precision GNSS, side-scan sonar, magnetometer, boomer seismic, UAV's software, staff, etc.







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## Water & Sanitation



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Monitor, assess &  
manage their  
freshwater resources



Improve access  
to safe drinking water &  
sanitation



Support PICTs  
to better manage  
vulnerability & risks



Support through  
convening  
& coordination





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# Hydrology



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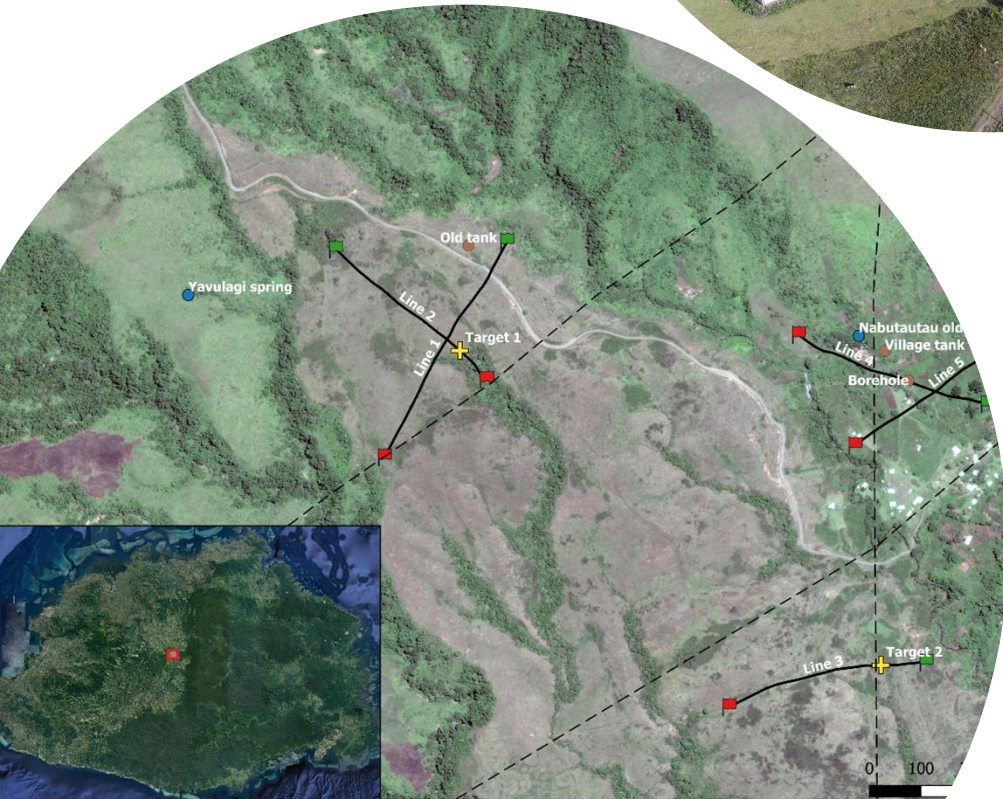
## IMPROVING WATER SECURITY OF NABUTAUTAU VILLAGE COMMUNITY IN FIJI

Context: Drought-prone community in central Viti Levu – population 200

### Objectives

- Groundwater investigation using geophysics to identify fresh groundwater resources
- Guide the Mineral Resources Department of Fiji with their drilling operations

Results: Identified two potential drilling targets





- Based within Geoscience, Energy and Maritime (GEM) Division of SPC
- Provides secretariat and technical support to the Council



Technical Support in Surveying, GIS, Remote Sensing, Drone Operation, Maritime Boundaries, Geology and Hydrography.

Capacity in Maritime Law and Policy, stakeholder engagement, Trainings, Communications, Procurement, Management, Virtual Meetings.







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**Vinaka Vaka Levu**