



Using Earth Observation and Remote Sensing in the Pacific Islands Region :The IEEE GRSS Remote Sensing Environmental,Analysis, Climate Technologies Technical Committee (REACT)

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PACIFIC ISLANDS FORUM

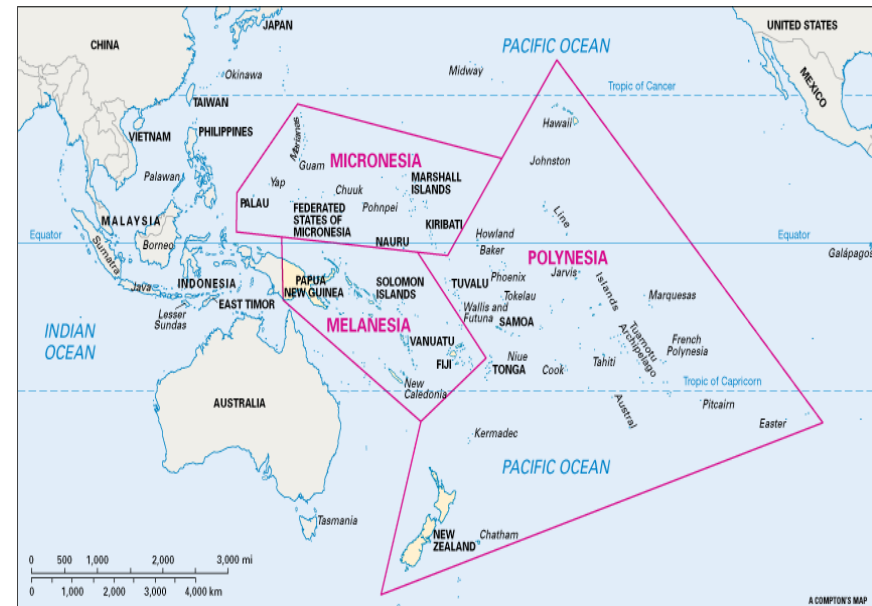


*“ **We are the Blue Pacific Continent...** and we are the frontlines of the climate change crisis. Our islands, our ocean, our people already face the devastating impacts of climate change including rising seas, king tides and ravaging cyclones. Limiting global warming to 1.5 degrees – this is our survival roadmap”.*

COP26 Statement by the Secretary General of the Pacific Islands Forum, Mr Henry Puna, 10 November 2021.

2050 Strategy for the Blue Pacific Continent

The 2050 Strategy is an opportunity to identify our challenges, build on our strengths and collectively determine the future of our Blue Pacific Continent.



Protect and secure our people, place and prospects

Geoscience and Remote Sensing Society (GRSS)



WHAT IS GRSS?

- The Geoscience and Remote Sensing Society (GRSS) is a community of researchers and practitioners collaborating and designing tools to understand our interaction with Earth's ecosystems, to monitor its environments, oceans and ice caps, and to characterize potential risks. GRSS supports a network of collaborations at global, regional and local levels.
- GRSS is one of 39 technical societies of the Institute of Electrical and Electronics Engineers (IEEE). GRSS fosters engagement of its members for the benefit of society through science, engineering, applications, and education as related to the development of the field of geoscience and remote sensing.
- GRSS has more than 5200 members in 94 countries. It has currently 79 chapters all over the world 16 of which are student chapters.
- The Society supports its membership through, Publications, Conferences, Professional Activities, Information Resources and

The fusion of geoscience and engineering disciplines gives GRSS a unique interdisciplinary character and an exciting role in advancing remote sensing science and geospatial technologies for environmental and societal benefit.

Technical Committees.



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Find out more at www.grss-ieee.org



What is the Remote sensing Environment, Analysis and Climate Technologies (REACT TC)?

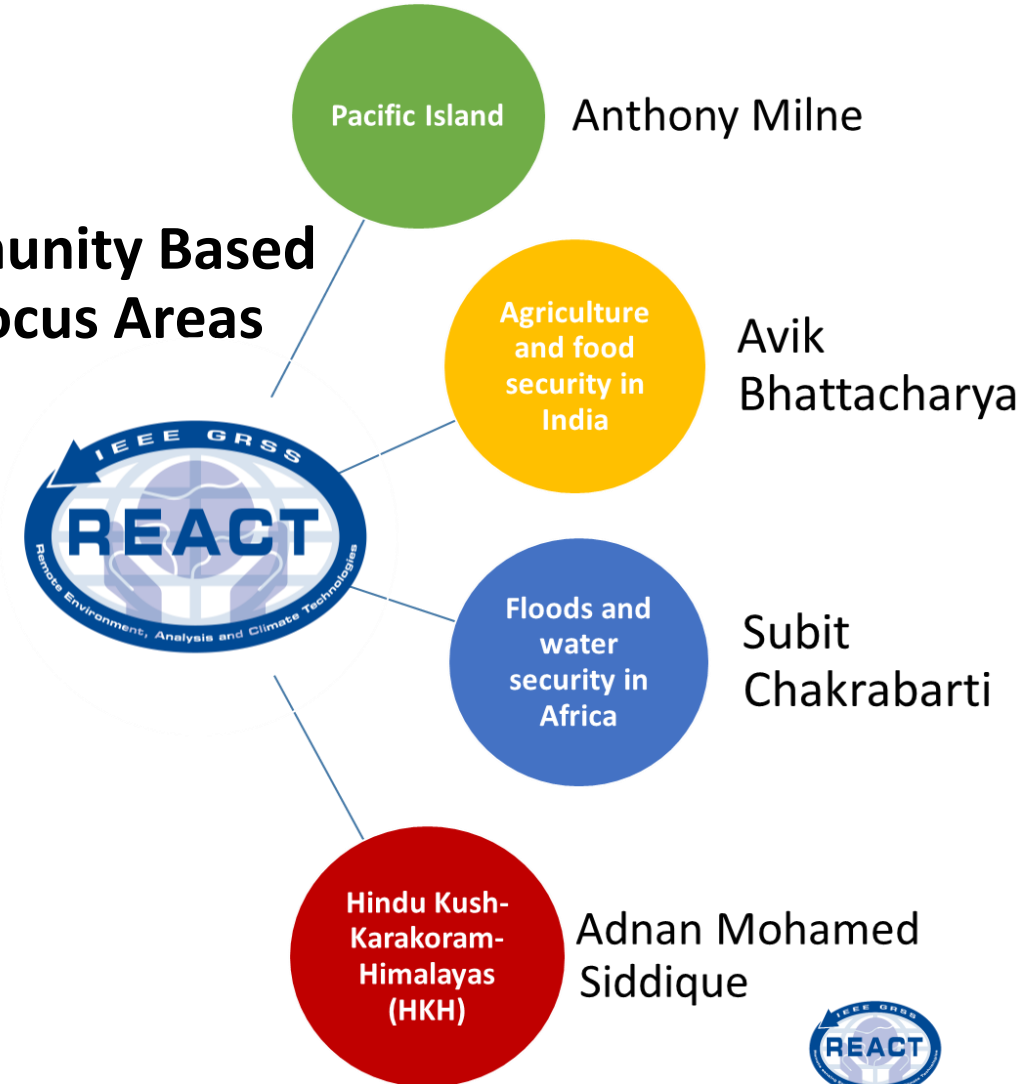
- **REACT** is a Geoscience and Remote Sensing Society (GRSS) Technical Committee and a venue for all scientists and technical experts engaged in earth observation and studying the impact on the environment of climate change to exchange ideas and share knowledge.
- It aims at advancing science and to help in defining requirements for the production of data products and applications related to achieving Sustainable Development Goals and has recognized the Pacific Region as one of its 'focus areas' to support.
- Earth Observation and Remote Sensing technologies are critical components in helping to monitor sustainability indices at the local, regional and global scales. GRSS is committed to advancing these technologies to help build environmental and societal capacities to mitigate and adapt to climate change impacts.

Remote sensing Environment, Analysis and Climate Technologies

Technical Committee Objectives

- Gathering a community, that is working together in a common region
- To develop methods and techniques to explore different risk applications and management domains
- Meet SDGs and climate issue requirements using remote sensing
- Make local application results transferable to helping solve global issues
- Define current and future use information needs in local areas
- Enhance interdisciplinary and multi-cultural sharing

Community Based Focus Areas



Securing EO and Remote Sensing Capacity – Pacific Islands

A report “Digital Earth Pacific-Needs Assessment Report “just released by the Secretariat of the Pacific Community (SPC) , identifies the major Tier 1 priority information needs required by all Island States and Territories in relation to land cover and disasters preparedness (Table 2 below).

<https://purl.org/spc/digilib/doc/6e7ob>

Table 2: Tier I priority areas

Thematic area	Needs and use cases
Agriculture	Vegetation index – crop detection
Climate change	Coastline change detection
Conservation	Forest cover change detection
Disaster management	Cyclones
Disaster management	Inundation modelling/flooding
Disaster management	Digital Elevation Model
Urban development	Land use/land cover mapping and change

Negotiating Agencies

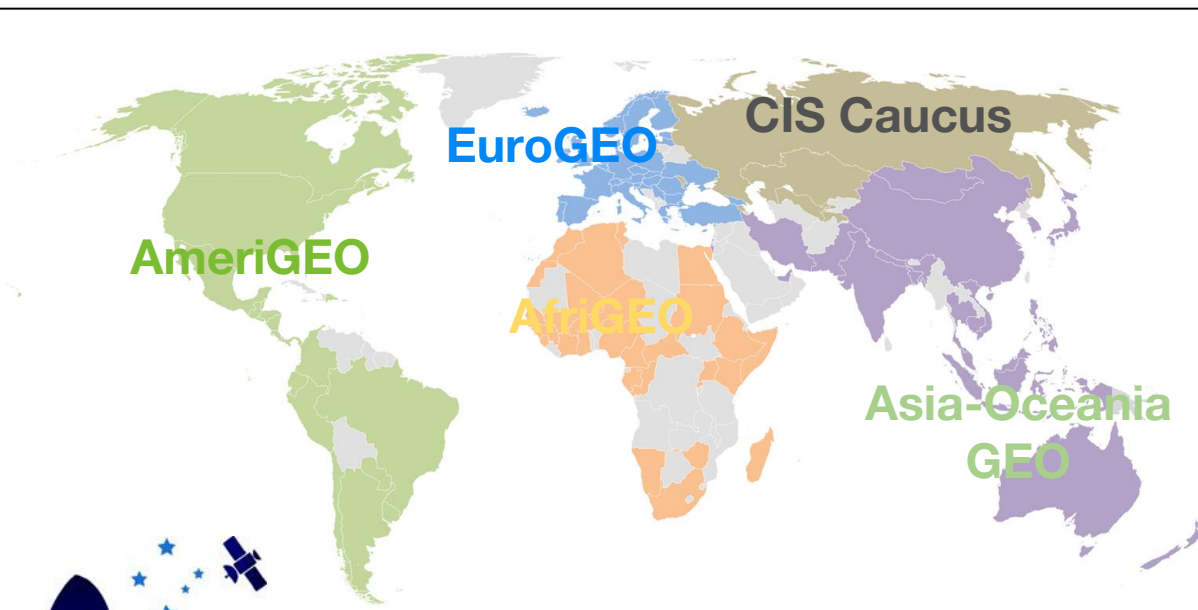
South Pacific Regional Environment Program (SPREP), <https://www.sprep.org/>
University of the South Pacific (USP), https://www.usp.ac.fj/index.php?id=geog_earth_env
GEO Pacific Islands Advisory Group, Professor A.K Milne t.milne@unsw.edu.au

REACT

Overview of GEO and the GEO Work Programme

**GEO is an
Intergovernmental
Partnership of 113 Members**

**140 Participating International
Organizations**



Where Does GEO Focus

Sustainable Development

Climate Action

Disaster Risk Reduction

Resilient Cities and Human Settlements



What GEO Does

- Advocate** Open sharing of Earth observation data, information and knowledge to support decisions and actions
- Engage** With a wide range of stakeholders to understand needs and collaborate on joint solutions
- Deliver** Earth observation-based methods, tools, and services to build capacity and address global and regional challenges

GEO Work Programme Activities

- Open collaborations of GEO Members, Participating Organizations, and others
- Work together collectively on common projects
- Focus on defined users and outputs
- Connection to global policy organizations & frameworks
- Develop open, re-usable methods and results that can be applied and adapted by anyone



Capacity Development is integral to GWP activities



Traditional Approach

- User organization identifies a need
- Provider organization develops & delivers a course (on-site or virtual)
- Users participate as recipients
- Assessment based on participant satisfaction



Co-Creation Approach

- Complex problem addressed by joint effort
- Participants may bring technological capabilities, contextual knowledge, identified needs
- Assessment based on real learning, performance improvement, future management of the problem



A POSSIBLE ROLE FOR REACT

The main challenge is how can REACT members become engaged in working with colleagues in the Pacific to derive EO information needed to help address immediate SDGs goals and the impacts of climate change?

Objectives could be

- To design and implement remote sensing initiatives that will help provide application analytics and image processing routines.
- Assist with training so Pacific Island Nations and Territories (PICTs) can realise the benefits of earth observation ,
- Help in addressing the problems of SDG's, climatic change and disaster events so PICT's can achieve ongoing sustainable management of their homelands and future.



*A 'think tank' or a 'meeting to exchange ideas' or 'a Conference Paper' are not sufficient options. What is needed is a **new model** that would allow GRSS to support addressing the immediate information needs of vulnerable communities, such as mapping mangrove retreat along narrow island reef zones; inundation mapping and flood prediction; land cover mapping at local scales, to name but a few fundamental applications needed good for decision making.*



IEEE Geoscience and Remote Sensing
Society (GRSS) is an OGS partner ...see more



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Thanks to our partner



who joins us in this adventure

www.oceania-geospatial.com

A regional community event