SIDE EVENT 7:
UAV Mapping for Informal Settlements in Fiji
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UAV Mapping for Informal Settlements in Fiji


Organized by: The University of the South Pacific & Pacific Flying Labs.
Speakers:
• Ms. Aleen Elisha Prasad - Research Assistant, University of the South Pacific
• Ms. Amrita Lal - Coordinator for Pacific Flying Labs, University of the South Pacific

With the increased popularity of unmanned aerial vehicles (UAV) in the GIS & Remote sensing industry, their importance and hence demand for this technology is growing rapidly. UAV's has proven their potential to be a valuable tool in GIS through producing on demand, real time data and imagery which enables us to map current situations. At the University of the South Pacific, through Pacific Flying Labs, we are implementing state of the art technology to conduct mapping of informal settlements with the use of UAV's & high precision RTK system. Our aim is to contribute to the growing baseline data through mapping and modelling coastal Fijian villages and informal settlements around Fiji.
UAV MAPPING FOR INFORMAL SETTLEMENTS IN FIJI

Ms. Aleen Elisha Prasad - Research Assistant, University of the South Pacific

UAV Mapping for Informal Settlements in Fiji

Fifth Pacific Urban Forum

School of Geography, Earth Science & Environment

HELLO!

Dr. Nick Rollings
Associate Professor

Dr. Nathan Wales
Lecturer

Semisi Ketenilagi
Amrita Lal
Kolora Qaviti
Waisale Rakusanavanua
Aleen Prasad
Geospatial Science Research

Technology and Tradition
Using technology where it makes a difference
South Pacific Flying Labs

Outreach based on scientific research.
Collaboration
- Ministry of Lands & Mineral resources
- Ministry of women, Children & Poverty Alleviation
- GIZ REDD+
- Red cross
- UN Habitat

Research is built in our academic programmes at USP
Capacity Building for undergraduates

Benefits
- Economical – up to 90% compared to traditional methods
- Easy to Fly - Ready to go system with automated flight planning (Network not required)
- Accuracy – High accurate products
- High resolution aerial imagery
- Multiple data points in one short flight
- Operational in hazardous & hard to reach areas

Limitations
- Flight time – different platforms
- Data storage
- Launch methods
- Safety
- Privacy
Drone Laws in Fiji

- Drones may not be operated within 3 kilometers (2 miles) of a domestic airport or 5 kilometers (3 miles) of an international airport or airfield.
- Do not fly drone more than 200 feet vertically.
- Do not fly drones in a manner that may impair the safe operations of aircrafts.
- Visual contact with drone must be maintained at all times.
- Do not fly over airstrips, helipads, fuel depots, private homes, moving vehicles, populous areas, or sporting events.
- Do not fly drones over sensitive areas such as hospitals, prisons, government institutions, the House of Parliament, police stations or military barracks and institutions.
- Do not operate drones at resorts without prior permission from the resort’s management.

Team of CASA Certified UAV Pilots

- Dr. Nicholas Rollings
- Semisi Ketenilagi
- Amrita Lal
- Tarish Obed
- Waisale Rakusanavanua
- Aleen Prasad
Village/Settlement Profiling

Outreach underpinned by Scientific Research

Photo/Image

UAV/ Drone Mapping Results

Outreach underpinned by Scientific Research
UAV/ Drone Mapping Results

Village/Settlement Profiling

https://cloud.pix4d.com/pro/project/276860/map?shareToken=eabc8064-d8c2-4f4f-9c4f-d7cb704326b

Outreach underpinned by Scientific Research
Village Profiling - Naboutini Village
AI Object Detection on drone images

Outreach underpinned by Scientific Research

Building Footprint Detector

Outreach underpinned by Scientific Research
Vehicle Detector

Outreach underpinned by Scientific Research

Hangar 360

https://viewer.hangar.com/360?assetId=gjvomVXr

Outreach underpinned by Scientific Research
Collaborative Projects

- **GIZ REDD+**
  Forest Degradation Mapping

- **The University of New Caledonia**
  Social spatial dynamics of informal settlements in the Pacific Island Countries.

- **The Ministry of Women, Children and Poverty Alleviation**
  - Village Profiling for Serua
  - Highland & Coastal area.

Thank You

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