Status & Challengers of Cook Islands GEO-DRM

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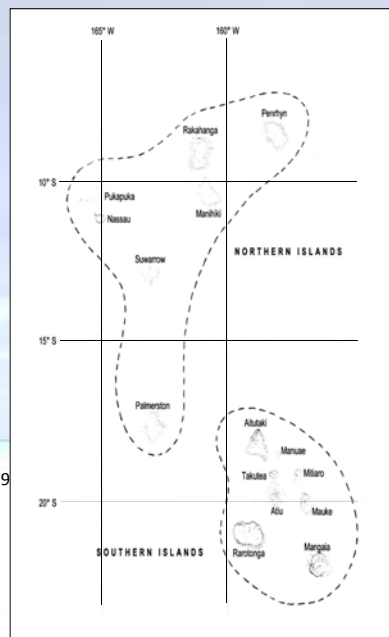# Cook Islands GEO-S/GIS History

- **1990 –** NZODA/MFAT trained by Landcare Research of Manaaki Whenua, 8 Govt IT staff.
  - Ministry of Agriculture Research & PDU division.
  - Environment Services Land Development division.
  - Ministry of Works Survey & Waterworks division.
- **1995 –** Government Ministry reform and transition of core services.
- **1996 – 1998,** Government responsibilities adhoc and privatisation of GIS capability and core services.
- **2006 –** Government National Plan formulated (NSDP) was launched.
- **2007 –** CRRP Proposal for high-resolution satellite imagery from IKONOs to Quickbird (DEMs and orthorectification).
- **2008 –** EDF9, SOPAC installation of the Cook Islands Mapserver hosted by MOW (MOIP)

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Salient features of the Cook Islands

- **Population:** 13,349 (2011 census)
- **Capital:** Rarotonga – pop 8,424
- **Cyclone Season:** November – March
- **Industry:** Tourism, Fisheries, Agriculture, Deep Sea Mining, Financial Services
- **Tourism No:** 110,000 per year
- **EEZ:** 2.4 million km^2
  gained 400,000 km^2
- **Island Groups:** Northern Group – 6i, 1u, Southern Group – 6i, 2u, Total – **15 Islands**
- **GDP:** $US15,813
- **Constraints:** De-population - migration, Island isolation- Irregular Inter Island shipping transport,
- **Disasters:** **Cyclones** – 1986, 1st Nov 1997 – 9 deaths, 10 missing. 2005 – 5 successive cyclones in 1 month. 2010 - Cyclone Pat – Aitutaki. (**Flash floods**, **Erosions** 1990s – 2000, **Draughts**.

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Many organisations provides GIS capability

Agency	GIS Utilisation	Case Study Area
MOA	Forecasting Risk Reduction & planning	Crop Production. Land Zoning.
	Spatial Risk Mapping Risk monitoring & early warning	Disease outbreak. Surveillance monitoring.
Met Services	Risk Monitoring & early warning	Coastal and Land flooding forecasting.
MOIP	Risk Reduction & planning	Infrastructure mitigation. Land Survey & remote sensing. Building standards & codes.
EMCI	Spatial Risk Mapping Modelling & simulation	Disaster Management Program. Tsunami Inundation. Tsunami evacuation mapping.
NES	Risk Reduction & Planning	Land development compliance standards.
Red Cross	Risk Reduction & planning	Disaster Management Program

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Status, Experiences & Lessons Learnt

Status:

- Baseline
  - MOIP, Lands information custodians to Government data, digital elevations models, and are the authority to all analysis to remote sensing data.
- DRM
  - Inundation models, coastal and land flooding risk management and warning models.

Experiences

- GIS maps used as tools for Aitutaki recovery, inundation models, Risk assessment VCAs.
- GIS Database on cyclone shelters for national maintenance program.
- GIS Maps for flash flood inundation on Rarotonga.

Lessons learnt

- There are few remaining GIS expertise needs more training.
- No web portal experiences as a platform for disaster management.
- Lack of coherence and coordination among actors and data providers.

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Access to Satellite data

Modalities:
- Regional Arrangements through SOPAC, SPC.
- Commercial Procurements.
- New Zealand Maritime Navy.

Authorised Sources:
- US National Oceanographic Atmospheric Administration (NOAA)
- PTWC

Commercial Sources:
- IKONOS, QUICK Bird,

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Key Policy & Institutional Issues

National Policy Issues:

- National legal controls on data sharing.
- National Policy for easy access of Geospatial data between government agencies.
- Lack budgetary policy to support ongoing Geospatial development to enhance development.

Institutional Issues:

- Institutions working on GEO DRM independently and in silo.
- Gateway agency (MOIP) lack support to coordinate data standards, access, utilisation to assist GEO DRM work.
- Absent of Geo-DRM gateway to increase public awareness

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Capacity Development Needs

- **Support** – to build accurate and reliable data of appropriate scale & resolution
- **Training** – at professional level of specialists working in geo-data and database management.
- **Investment** – to invest in enhancing MOIP national spatial data infrastructure development.
- Access – to real time data satellite regional networks.
- **Technical support** – for establishing data sharing agreements, central data warehousing and Geo-Portal hosting.
- **Policy Advocacy** – Promote buy in GIS DRM systems in alliance with all stakeholders

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Executing FERN Mapping System