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THE NATIONAL GEOSPATIAL CONFERENCE



Collaboration, Innovation and Resilience: Championing a Digital Generation

Brisbane, Australia 6–10 April

Resilience through Land Management

Value of Linking Climate and People to Land

Tonga's Experience

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*8-10 April 2025 in Brisbane, Australia
Presented at the FIG Working Week 2025*



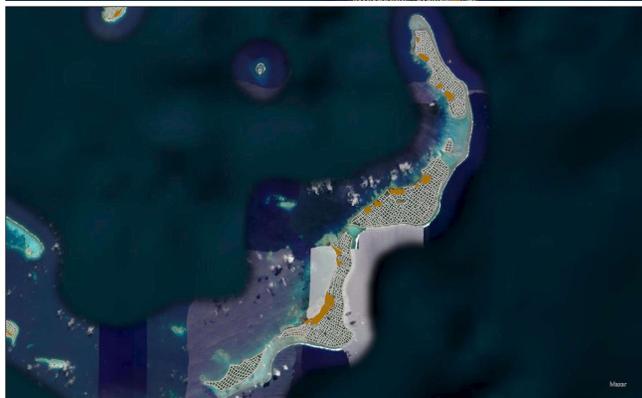
Bruce Alexander and Larry Wordworth



PLATINUM SPONSORS



Coastal Based Population



- Tonga like all Pacific Islands villages are tends to be concentrated along the coasts.
- Oceania people of the Moana (The ancient Oceanic word for Ocean).
- Villages were all located along coasts before.
- Existing villages surveyed and allocated to locals.
- All coastal population always the first line of impact

Tonga Land System: The Constitution



Constitution of Tonga 1875

Part 1: Declaration of Rights

Part 2: Form of Government

Part 3: The Land

104. All the land is the property of the King, and he may at pleasure grant to the nobles and titular chiefs or matabules one or more estates to become their hereditary estates.... shall not be lawful for anyone at any time hereafter whether he be the King or any one of the chiefs or the people of this country to sell any land

Tonga Land System: The Land Act



Land Act of Tonga 1927

Section 4 Holder's interest.

The interest of a holder in any hereditary estate, tax allotment or town allotment is a **life interest** subject to the prescribed conditions.

Section 5 Holdings hereditary.

Every estate (tofia) and allotment (api) is hereditary according to the prescribed rules of succession.

Section 12 Sales of land is unlawful

Section 19 Minister of Lands

(2) He shall grant allotments to Tongan subjects duly entitled thereto by law.

(3) He shall grant leases and permits with the consent of Cabinet;

Section 43 Tongan subject may apply for allotment.

every male Tongan by the age of 16 is entitle to grant allotments

53 Subdivision of tax allotments for plantation

Section 56 Tax or town allotment may be leased.

Land Use



National Spatial Planning and Management Act 2012

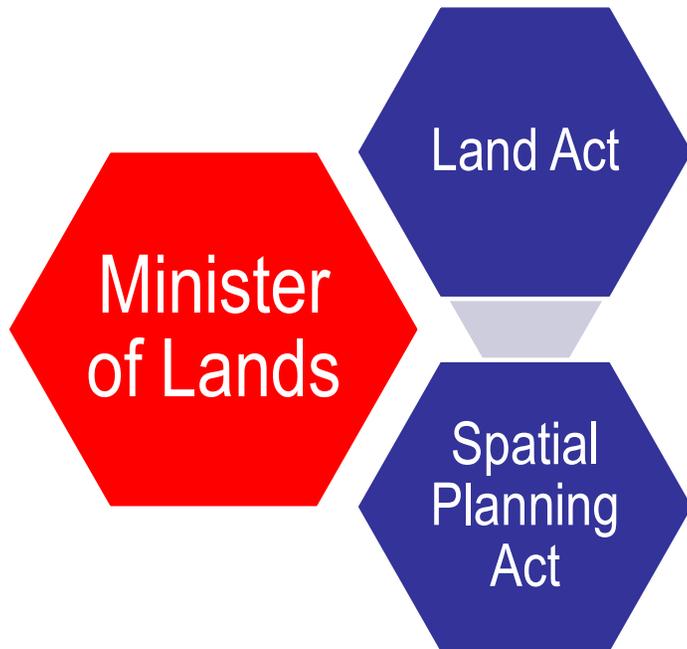
Section 2 Interpretation

“**development**” includes the use of land (whether for a long term or temporary purpose), the erection of a building or other structure, the carrying out of a work, **subdivision**, and any other activity regulated under this Act;

Section 4 Objectives

- (a) provide for the fair, orderly, economic and sustainable use, development and management of land including the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity;
- (b) enable land use and development planning and policy to be integrated with environmental, social, cultural, economic, conservation and resource management policies.....
- (d) secure a pleasant, efficient and safe working, living and recreational environment for people in the Kingdom;

Ministry of Lands, Survey, Planning and Natural Resources



Minister of Lands and Registrar General under the Land Act and the Planning Authority under the Spatial Planning and Management Act.

Same Ministry

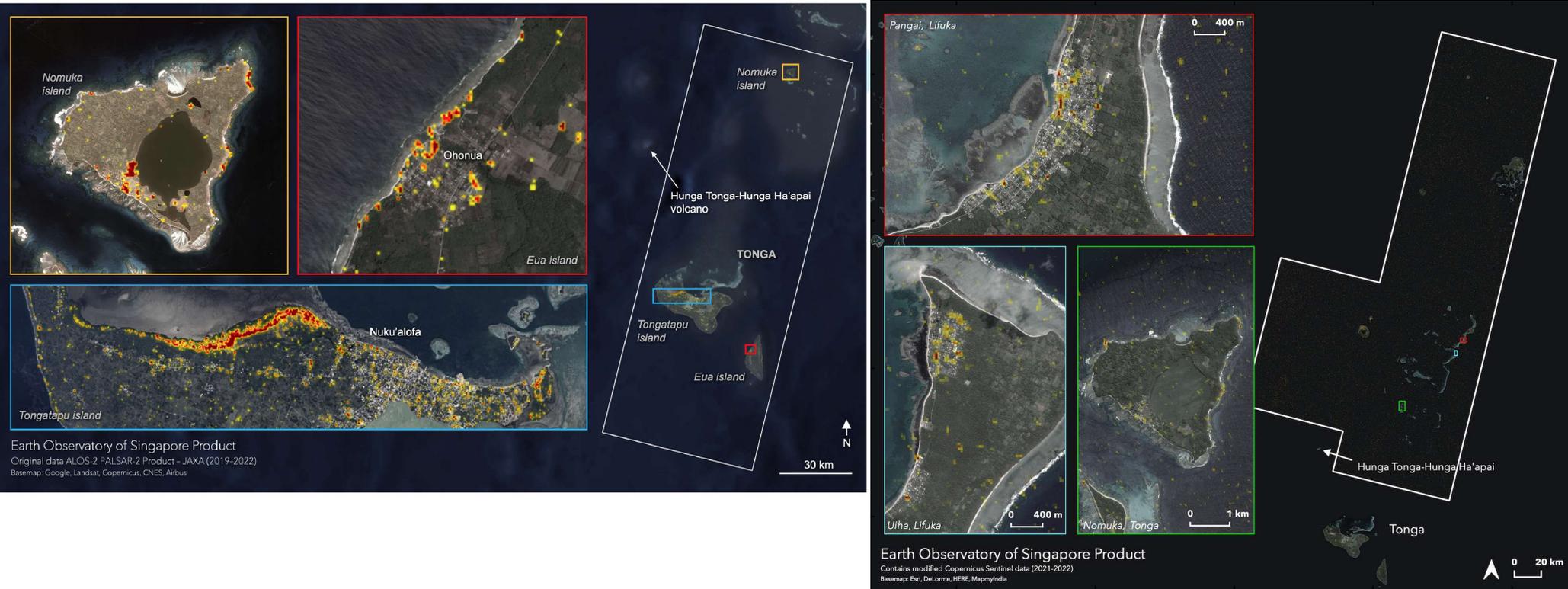
Resilient Frameworks



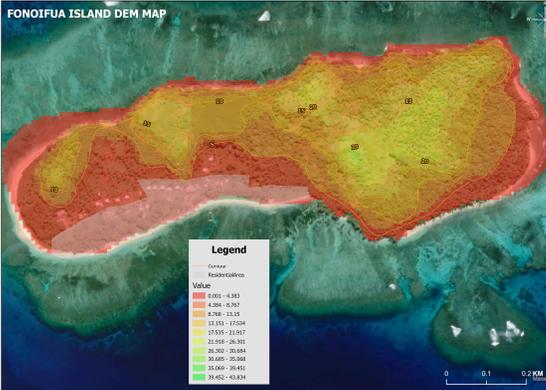
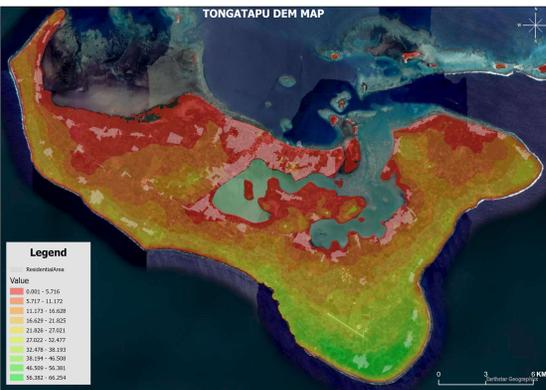
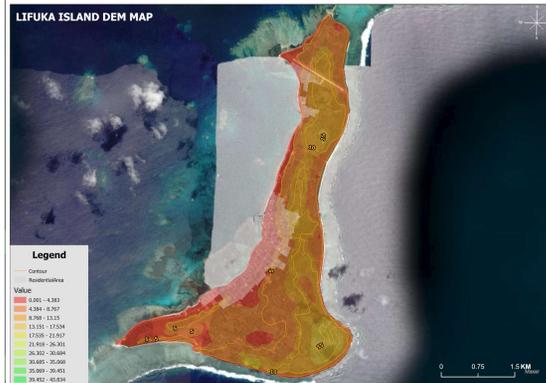
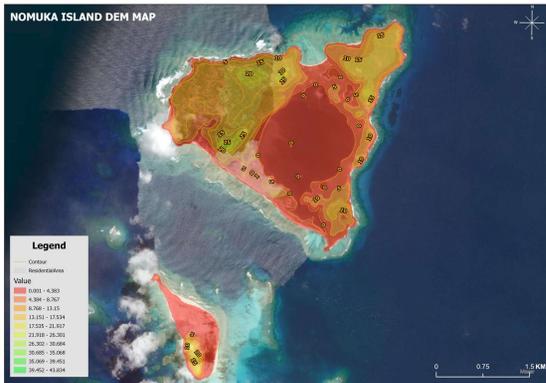
Tonga Coastal Resilience Project Launched 2024

- Funded by the GCF, this landmark initiative – with a total budget of US\$23.9 million – is a significant step forward in addressing climate change impacts across the Tongan archipelago.
- Integrate climate risk information into local development planning, strengthening local capacities to collect and manage data for **coastal adaptation planning, and constructing over four kilometers of sea defenses in vulnerable coastal areas**
- Additionally, the project will address issues such as **land-use planning and voluntary retreat** to enhance Tonga's long-term resilience.

Affected Population-Hunga Tonga Hunga Ha'apai Tsunami



Availability of Land



Availability of Land:

1. There are available land in higher ground for relocation.
2. Available land are mostly farmland for agriculture. Will impact source of food.
3. After tsunami affected population were relocated

Relocation

1. Safe higher grounds were identified
2. Land were provided by Estate Holders for relocation without any fees.
3. Donors fund the new houses.
4. **More people are still staying in low-lying coastal areas.**

People, Climate and Land



People

- Where? Location. Coastal Communities
- Poor building Conditions
- Safety and security
- Cultural, social, and family connection to land

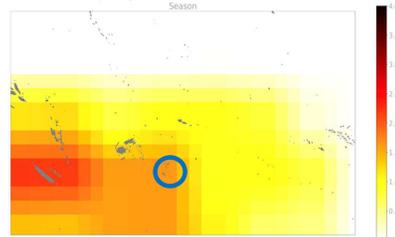


Figure 1: Expected number of Tropical Cyclones predicted to affect Tonga during the Tropical Cyclone Season 2023-24

Climate/Disasters

- Sea level rise
- Frequency and severity of disasters and hazards
- 1 or 2 cyclones every year
- Earthquakes, increase the risk of tsunamis



Land

- Most Priced possession
- Land available for relocation.
- Relocation may impact land for farming and agriculture
- Land is scarce resources.

	Feudalism -1800	Industrial revolution 1800-1950	Post-war reconstruction 1950-1980	Information revolution 1980-
Human kind to land evolution	Land as wealth	Land as a commodity	Land as a scarce resource	Land as a community scarce resource
Evolution of cadastral applications	Fiscal Cadastre Land valuation and taxation paradigm	Legal Cadastre Land market paradigm	Managerial Cadastre Land management paradigm	Multi-purpose Cadastre Sustainable development paradigm

Figure 23: Evolution of Western cadastral system (developed from Williamson et al., 2010).

Linking People, Climate and Land

People



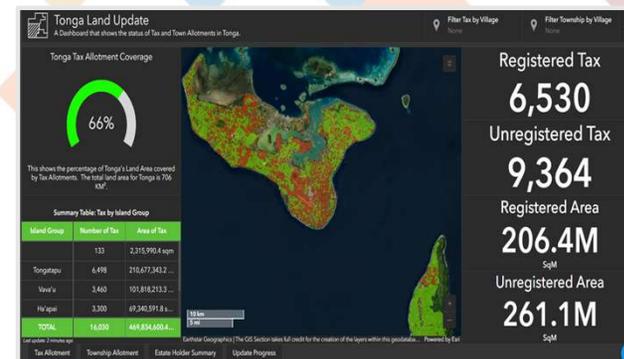
- We are no longer safe
- Where we live is no longer safe
- How we build is no longer safe
- Relocation Issues

Climate & Natural Disasters



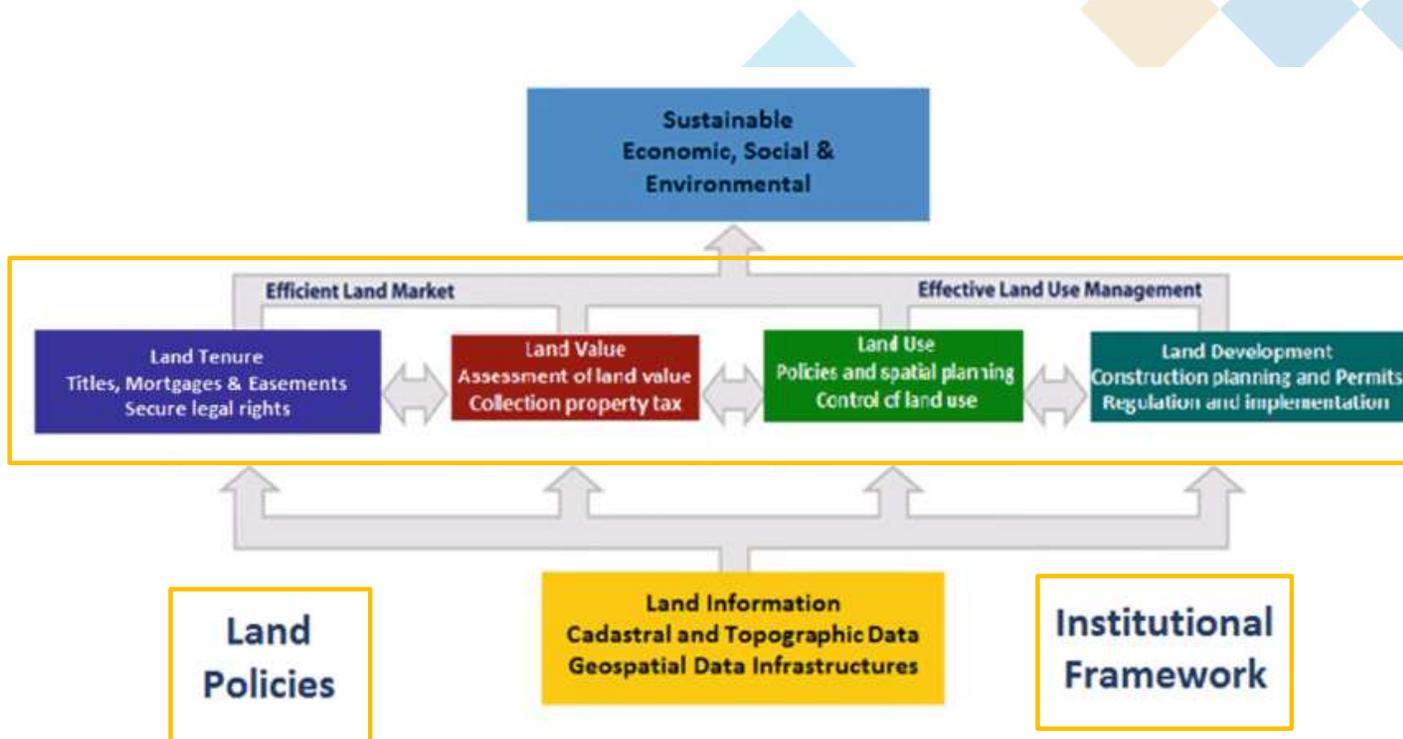
Climate and Disasters in Pacific will remain as forecasted

Land



- Opportunity through Land Administration and Management
- Relevant legislations, regulations, policies in place
- Tonga needs a robust Land Administration System

Global Land Management Perspective



Localising the Global Land Administration Perspective

Resilient Through Land management by Localising the Global Land Administration Perspective

<p>Land Information Cadastral & Topographic Data Geospatial Data Infrastructures</p>	<p>National Geospatial Action Plan: UN IGIF UNGGIM Geospatial Information for Climate Resilient</p> 
<p>Land Tenure</p>	<p>Regulation under the Land Act to be in place to administer allocation and subdivision of land Align Land Act with Spatial Plan Act</p>
<p>Land Value</p>	<p>No Valuation Act Value of coastal low-lying areas</p>
<p>Land Use</p>	<p>Regulation, Standards, Guidelines, and Zoning under Spatial Planning Act to be in place</p>
<p>Land Development</p>	<p>Building Codes and Regulations Enforcement Aligns with Land Use and Land Tenure Strict Building Standards/Permit for Disaster Prone Areas</p>

1. Implement National Geospatial Action Plan
2. A more Robust Institutional Framework and Land Policies
3. Strengthen Land Tenure, Land Value, Land Use and Land Development and Create Cohesiveness and Alignment.
4. Avoid operating in silos
5. Develop a National Land Administration Framework

Those currently vulnerable in vulnerable areas.

1. Audit Available Land for Relocation
2. Campaign for Relocation of Vulnerable Communities
3. Evacuation Routes to Evacuation Centres
4. Strengthen Early Warning System
5. Enforce Building Codes
6. Build sea wall protection

Conclusion

1. Coastal communities in Tonga and other SIDS are the most vulnerable to Natural Disasters and hazards that are increasing in frequency and severity.
2. Ensuring resilient through the Localisation of the Global Land Administration Perspective and **make it our own**.
3. Build capacities and capabilities in land administration in Tonga.
4. Fully implement our **National Geospatial Action Plan** for an integrated geospatial information management
5. **No one can do this alone**. Need regional and global support, assistance and collaboration.
6. At the end of the day, its all about PEOPLE, its about US, our FRIENDS, RELATIVES and FRIENDS.

The most relevant SDGs related to the presentation and theme of this session

1st relevant SDG



11 SUSTAINABLE CITIES AND COMMUNITIES

2nd relevant SDG



13 CLIMATE ACTION

3rd relevant SDG



15 LIFE ON LAND

SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals