

# Digital Government and Technological Innovations for Resilient and Sustainable Societies

Presented by Andrew Toimoana



**26 October 2018**

**Incheon, Republic of Korea**

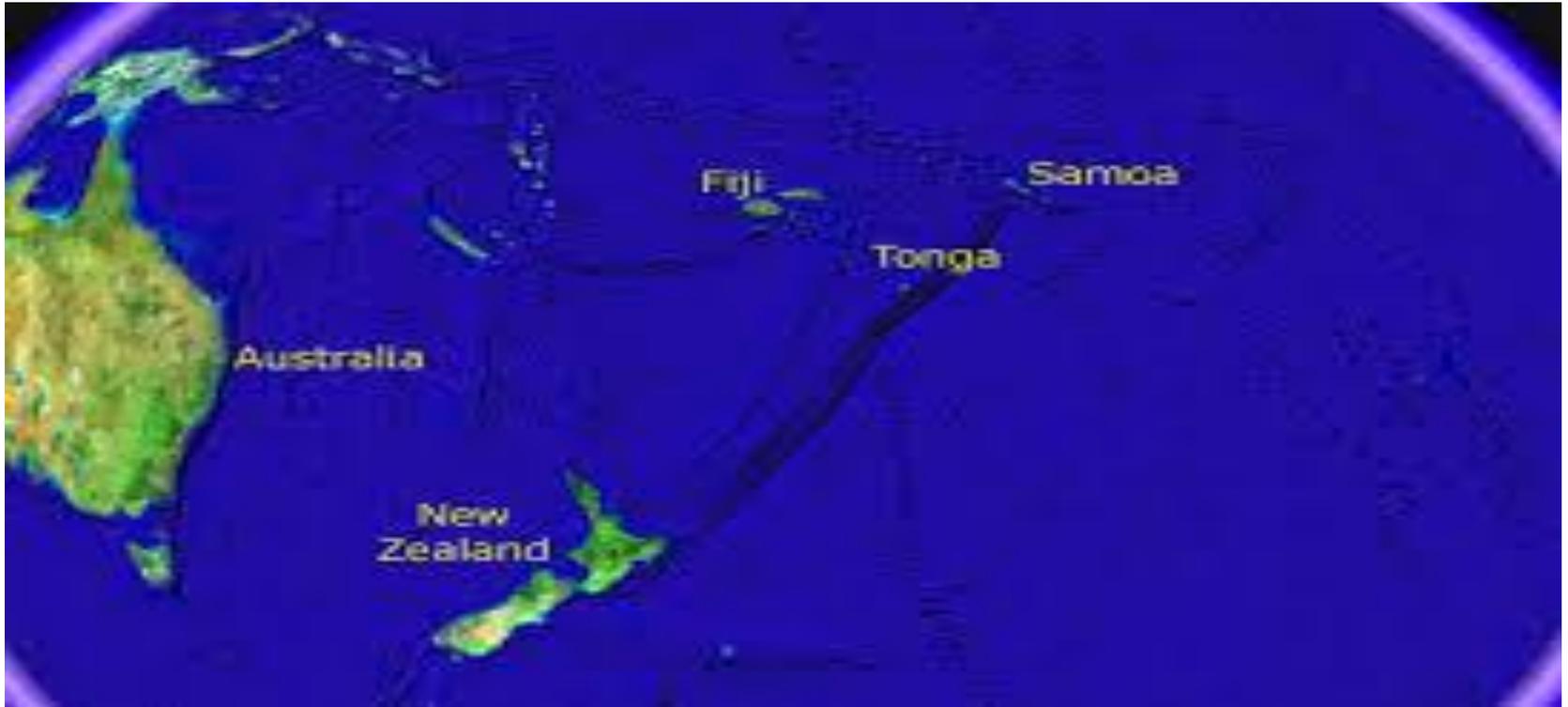


**UNITED NATIONS  
DEPARTMENT OF ECONOMIC  
AND SOCIAL AFFAIRS**



**Ministry of  
the Interior and Safety**  
AND SOCIAL AFFAIRS

# Where is Tonga



# About Tonga.



Total number of Islands

• 169 Islands

Total number of inhabited Islands

• 36 Islands

Total Population

• 103,252

Total land area:

• 750 Sq Kms



# NATIONAL VISION



- \* **Vision: Tonga Strategic Development Framework (TSDF)**

- \* “A more progressive Tonga supporting higher quality of life for all”

- \* **TSDF identifies seven key National Outcomes**

1. A dynamic knowledge-based economy
2. Balanced urban & rural development across the country
3. Empowering human development with gender equality
4. Responsive, good governance with strengthened rule of law
5. Successful provision and maintenance of infrastructure and information technology (IT)
6. Effective land and environment management, with resilience to climate and risk
7. Consistent advancement of our external interests and security



Ministry of  
the Interior and Safety



UNITED NATIONS  
DEPARTMENT OF ECONOMIC  
AND SOCIAL AFFAIRS

# Tonga Digital Government Strategic Plan's Vision



- \* “Digital Government in Tonga is dedicated to creating an efficient, responsive Government focused on improving the quality of life for all Tongans and enabling a robust business environment to create opportunities allowing Tonga to achieve regional and international competitiveness.”



Ministry of  
the Interior and Safety



UNITED NATIONS  
DEPARTMENT OF ECONOMIC  
AND SOCIAL AFFAIRS

# Digital Government Strategic Plan Objectives



1. Implement Digital Government Across All Government Agencies and Activities
  - a) Provide information and services that users need, both Government and citizen, delivered anytime, anywhere, and through the most efficient, effective, and responsive and responsive method / platform possible.
2. Advance Digital Inclusion for All Tongans
  - a) Digital Government requires online or electronic digital public services that are inclusive by default for the widest possible audience (universal design), accommodating a broad range of needs and abilities - including the elderly and citizens with disabilities, delivered locations in the country which may not currently have access to Internet.
3. Strengthen Governance and Efficiency
  - a) Government to create value for Tongan stakeholders through creating benefits for the citizens, reducing or optimizing risk in national investments and programs, and optimizing or creating the most value from national resources, including ICT-related investments.



# Digital Government Strategic Plan Objectives



4. Promote Data Sharing and a Service-Oriented Information Systems Architecture
  - a) The data sharing requirement for Tonga Information Systems is the core supporting all other components of the TSDf, ICT Strategy, and necessary to create efficiencies and value from data collected and consumed by Tonga Government ministries, agencies, and citizens.
  - b) Objectives include not only data identification and availability, but also incorporate standards for common applications, platforms, and processes.
5. Enhance Citizen Engagement
  - a. Enhancing citizen engagement goals are intended to reduce the impact of Government interactions on citizens, enable greater efficiencies in Government interactions, and enable citizens and business to establish a better relationship with Government as primary external stakeholders to the Government process.



# Digital Government contributes to the Climate Resilience



- 1. Integrating Digital systems enables speedily and secured access**
  - Establishing of a Government Datacenter enable relevant stakeholders to secured their data on a Virtual space with backup available to assure E-disaster recovery of their data.
- 2. Provide services to vulnerable people in vulnerable areas**
  - Increase connectivity via fiber and 4G network to the rural areas
  - Introducing of E-Health to the vulnerable areas
  - Mobile apps and social media has been an instrument in alerting of pre and post natural disaster



Ministry of  
the Interior and Safety



UNITED NATIONS  
DEPARTMENT OF ECONOMIC  
AND SOCIAL AFFAIRS

# Digital Government contributes to the Climate Resilience



- 3. Secured fast network to be used for the Early warning system**
  - Delegated virtual network for the Early warning system is being designed to be used only for the purposes of the Emergency situation and it is capable of carrying VOIP, Video and Data traffic.
- 4. Private Cloud services enable quick services to all relevant stakeholders**
  - Infrastructure as a Service (IaaS) – Fast provisioning of Digital space and connections for all Agency that needed it during the disaster.
  - Platform as a Service (PaaS) – Fast deployment of different servers as needed by different agency during the disaster recovering period.
  - Software as a Service (SaaS) – Fast deploying of Virtual machines to be used during and after disaster.



# Engaging In Frontier Technologies



## 1. New Tide/weather Gauge Station

- Department of Metrology just recently launched an Automatic Weather Station that provides real-time data on sea level, wind speed and direction, pressure, temperature and sea surface temperature via direct link to Forecasting Center located at the Airport.

## 2. Using Drone and Satellite Images for GIS mapping

- These images were instrumental in post assessment of the Cyclone Gita that hits Tonga this year.

## 3. Nationwide Early Warning System (News)

- A national Early warning system that get activates by AM radio frequency. This will be using the National Radio Station to send out signal to activation devices through out the Nation.



Ministry of  
the Interior and Safety



UNITED NATIONS  
DEPARTMENT OF ECONOMIC  
AND SOCIAL AFFAIRS

# Digital Technology for Resilience in Tonga



## \* Transferring technologies Strategy in Tonga

- \* Licensing agreements or MOU and partnerships to share both the risks and rewards of deploying new technologies.
- \* Conduct full analysis of the areas of impact such as legal, economical and social applications of the technology.
- \* Produce documentation and awareness training of the new technology.
- \* Best practice and standards must apply to the implementation of the technology.



Ministry of  
the Interior and Safety



UNITED NATIONS  
DEPARTMENT OF ECONOMIC  
AND SOCIAL AFFAIRS

# Challenges in transferring technologies in Tonga exist Vertically and Horizontally



## \* Horizontal Challenges

- \* Some of our Legislations and Policies are outdated and needed review to allow the engagement of new technology
- \* Frequent changes in the Political Will
- \* Lack of Funding to deploy all module of digital solutions
- \* Lack of users and communities awareness of the new Technology
- \* Strong Cultural belief and mindset.



Ministry of  
the Interior and Safety



UNITED NATIONS  
DEPARTMENT OF ECONOMIC  
AND SOCIAL AFFAIRS

# Challenges in transferring technologies in Tonga exist Vertically and Horizontally



## \* Vertical Challenges

- \* No proper Handover procedures from the developers to the responsible Unit or organization.
- \* No SLA in place for supporting of the new technology
- \* Lack of onsite Expertise to maintain the technology
- \* Not enough documentation and record keeping on the deployed technology.



Ministry of  
the Interior and Safety



UNITED NATIONS  
DEPARTMENT OF ECONOMIC  
AND SOCIAL AFFAIRS

# Possible opportunities to enhance our Resilience



1. Technical capacity training of the local staff in open source software packages that are available locally such as QGIS and other relevant software and platforms
2. Drones technologies has been a very important instrument during post disaster period but it will be more better to have those fixed wings drones that covers more areas in shorter amount of time to get more clear imagery and faster rather than waiting for cloud clearance
3. Explore the opportunities arising from street view particularly conducting more street view mapping pre and post disaster. This is the only way that we can confirm damage assessment figures and ensure that assessments.

# Possible opportunities to enhance our Resilience



4. Further Upgrade of our data management systems with better data indexing systems since technology for data collection is constantly evolving.
5. Long term scholarships for local scholars will more beneficial those who are responsible for gathering, interpreting data in data management and collection.
6. Closer collaborative efforts from the regional agencies on the development and evolution of these data repositories so it won't get idle without any data compilation for quite sometimes.

Thank you  
&  
Malo Áupito



Ministry of  
the Interior and Safety



UNITED NATIONS  
DEPARTMENT OF ECONOMIC  
AND SOCIAL AFFAIRS