



# Initiating a Science, Technology and Innovation (ST&I) Policy Development Process in the Kingdom of Tonga

**Taniela Kula**

**Deputy Secretary, Ministry of Lands, Survey & Natural Resources,  
Kingdom of Tonga, [tkula@naturalresources.gov.to](mailto:tkula@naturalresources.gov.to)**

PACE-Net Plus Bi-Regional Platform: Pathways to Innovation in the Pacific Region  
30 June - 1 July 2016, Tanoa International Hotel, Nadi, FIJI

  
**GOVERNMENT OF TONGA**  
**TONGA STRATEGIC DEVELOPMENT FRAMEWORK**  
**2015-2025**

**A more progressive TONGA:**  
*Enhancing our Inheritance*



MINISTRY OF FINANCE AND NATIONAL PLANNING, MAY, 2015

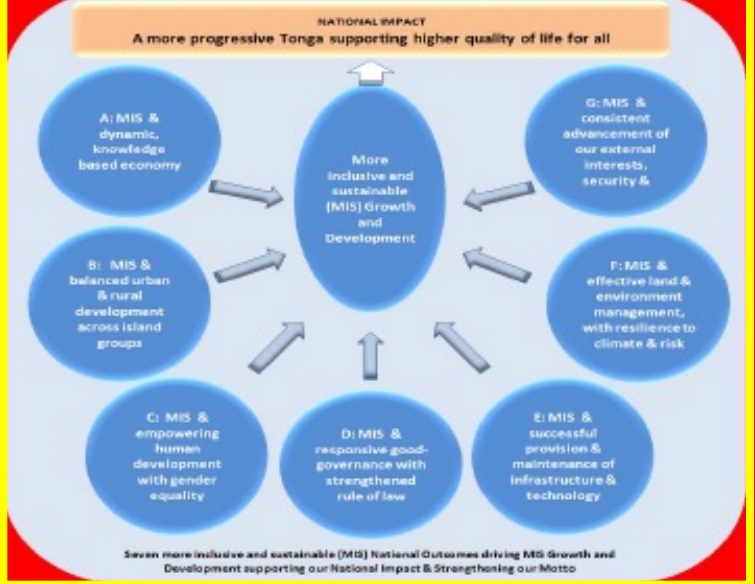
The TSDF Vision

God and Tonga are My Inheritance



Monitoring & Evaluation  
 at  
 All Levels

### God and Tonga are My Inheritance



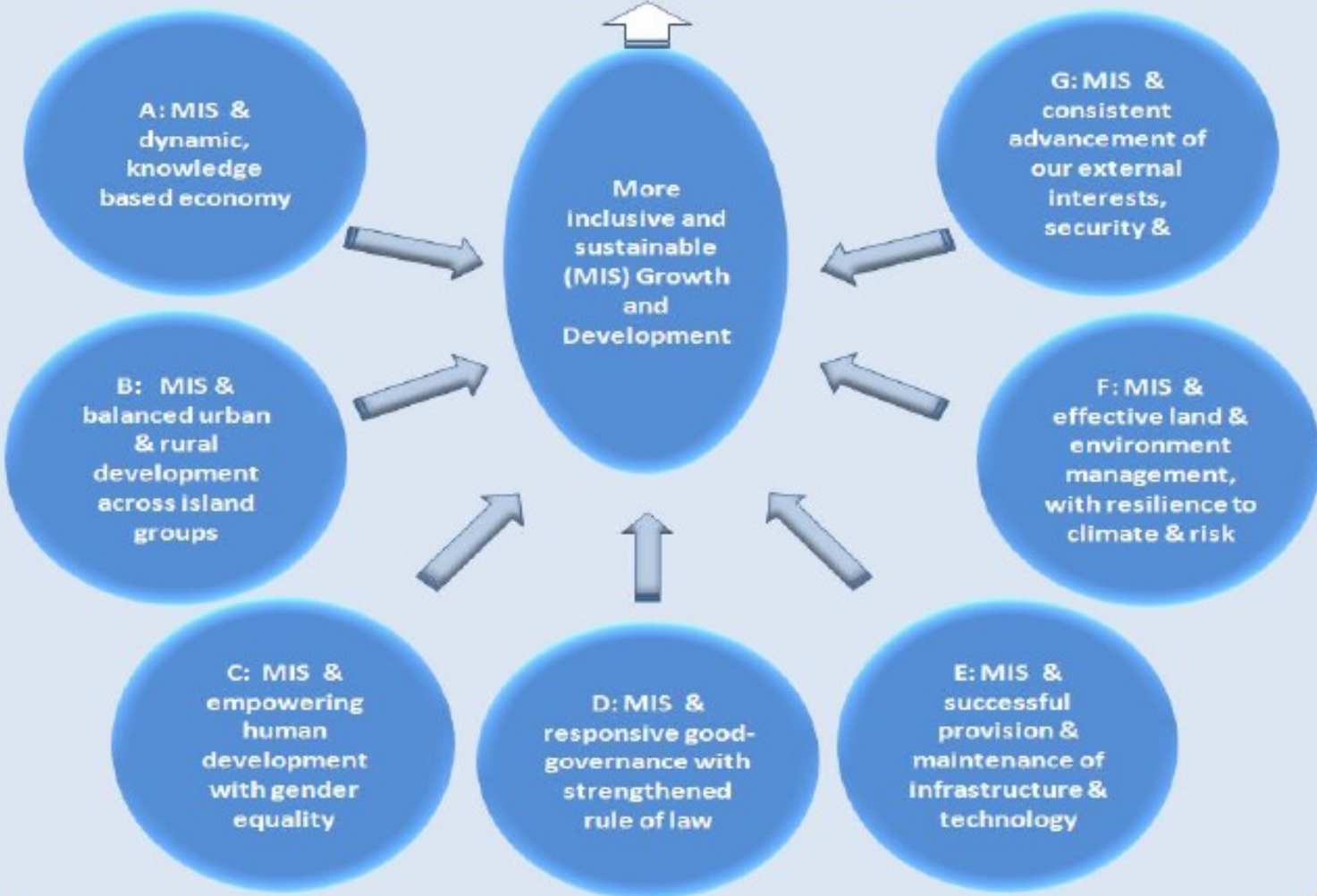
#### Results Framework



MONITORING & EVALUATION at ALL LEVELS

### God and Tonga are My Inheritance

**NATIONAL IMPACT**  
A more progressive Tonga supporting higher quality of life for all

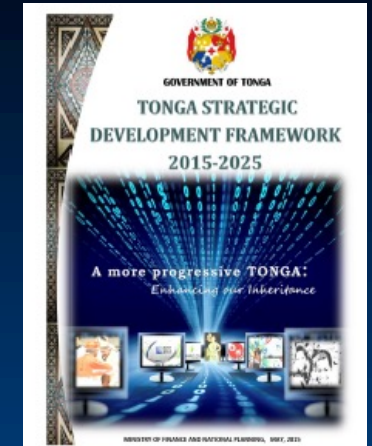


Seven more inclusive and sustainable (MIS) National Outcomes driving MIS Growth and Development supporting our National Impact & Strengthening our Motto

# Tonga Strategic Development Framework 2015-25

Explicitly and implicitly recognised the role of ST&I, e.g.

National Outcome A, **dynamic knowledge-based economy:**



*“We must build our economic capacity by increased productivity and by applying **better knowledge** supported by **improved application of research and development**. ... Within the primary and secondary industries, however, the **application of new knowledge and technologies** has the potential to increase the value-added of our production.”*

God and Tonga are My Inheritance



M O D E R N I T Y & E V A L U A T I O N

A L L L E V E L S

Seven more inclusive and sustainable (MIS) National Outcomes driving MIS Growth and Development supporting our National Impact & Strengthening our Motto

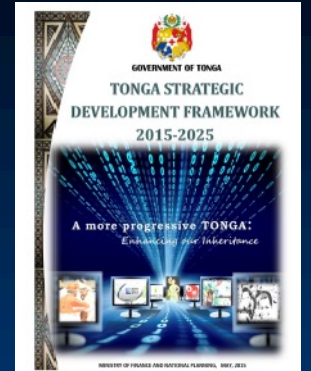


# Tonga Strategic Development Framework 2015-25

Explicitly and implicitly recognised the role of ST&I, e.g.

## Pillar 4: Infrastructure and Technology Inputs :

*“Improved use of **research & development** focussing on **priority** needs, based on stronger foresight ... we must become more willing to try new ideas, to test them under **local conditions** and to engage with others in the region and beyond with similar interests to us. This is a central part of becoming more **innovative within a progressive Tonga**”*

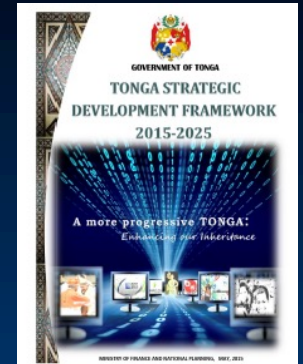


# Tonga Strategic Development Framework 2015-25

Explicitly and implicitly recognised the role of ST&I, e.g.

## Pillar 5: Natural Resources and Environment Inputs,

*“With the **right skills, technology** and infrastructure we can greatly enhance the contribution natural resources make to inclusive development...”; “Our limited resource base and sensitive environment require people with the **right skills** and **attitude** to manage and protect them.”; and “We also need access to **appropriate technologies and infrastructure** which support rather than threaten our sensitive environment .... **Lack of skills and appropriate attitudes** also mean that we may not manage the resources and environment properly...”.*



# Consultation with Key and Relevant Agencies and Industries

19 one on one interviews with:



- Ministry of Lands & Natural Resources (4) – CEO, Deputy CEO, Legal Administrator, IWRM Officer
- Ministry of Education & Training (1) – Acting CEO
- Environment Department (2) – Director, EIA Officer
- Marine & Ports Department (1) – Director
- Spatial Planning Authority (1) - Director
- Energy Department (1) - Director
- Public Health Department (1) – Senior Public Health Officer
- Ministry of Fisheries
- National Planning Division (1) – Principal Economist
- His Majesty Royal Armed Forces (1) – Naval Commander
- Tonga Meteorological Services (1) – Climate Forecaster
- Attorney General’s Office (1) – Legal Counsellor
- Tonga USP Campus (2) – Director, Deputy Director
- Tonga Water Board (1) – General Manager
- Tonga Telecommunication Corp;
- Tonga Power Limited (1) – General Manager



# National Workshop on ST&I Policy Framework Development



SECTOR REPRESENTATION (N=27)



# Principles

**The Policy Framework must be developed by  
Tongans for the benefit of Tonga**



# Principles

## ST&I Policy Framework **must be consistent with:**

- The **Tonga Strategic Development Framework 2015-25**
- **Existing policies**, strategies and plans, particular those on environment, natural resources, energy and climate
- **International and regional initiatives & agreements**



# Principles

## ST&I Policy Framework **must:**

- Focus **on gaps in Tonga-relevant** knowledge not repeat overseas work
- Have an **implementation plan, key performance indicators, and monitoring and evaluation framework**
- Include **traditional science & knowledge**
- Involve **youth**, they are the future



# Outputs – Main Emphasis

- **ST&I education** in our schools and technical colleges needs to be improved
- **Coordination in ST&I** in Tonga needs to be improved (Research Centre?)
- **Access to ST&I information** is inadequate (Research Centre?)
- **Lack of analytical and product testing facilities** (Research Centre?)
- **Food safety** and security is difficult to guarantee (Research Centre?)
- **Sustainability** of food, energy production, resource consumption and environmental systems are vital to a more progressive Tonga
- **Adapting and responding to climate extremes**, variability, and change and natural disasters
- **In-country capacity** in ST&I

Flooding in Nuku'alofa  
11 June 2016



Source: Matangi Tonga

# Affirmed Key Actions under the proposed ST&I Policy Framework

- A Tongan National **Research Centre**
- A **ST&I Council**/ Task force for governance and coordination
- A **Centre for Innovation** to support business development
- **ST&I talent identification** both locally and globally and a **network** to support local ST&I Initiatives and implementation
- Adequate **laboratory equipment** to enable critical tests and experiments locally
- Improve International Marketing through **certifying quality of products**
- Enhance **data and knowledge sharing, effective communication** to stakeholders
- Closer **collaboration between ST&I relevant agencies** and **incentives** for ST&I



# Development of ST&I Policy Vision and Goal



## Vision:

*A framework for enacting the research, innovation, science and technology components of the Tonga Strategic Development Framework II 2015-2025.*

## The Overall Goal:

*To ensure advanced education, applicable research, affordable technology, accessible innovation and sharing of knowledge for a more progressive Tonga supporting a higher quality of life for all.*

# Expected Impacts

- **ST&I Policy will enable enactment** of existing references in policy documents within the Government and allow further mainstreaming of ST&I
- Enhance Tonga's capacity by utilising its local and globally dispersed **ST&I talents and expertise**
- **ST&I Governance systems**, organisational structures and linkages established
- **Improved ST&I knowledge and jobs created** to contribute to a more progressive Tonga





# Achieved Outcomes

- **First Inter-Ministerial ST&I Meeting in Tonga**
- **ST&I Goal, Vision and Key Actions** where jointly identified and endorsed
- **Key Action areas: Knowledge sharing; Research Infrastructure; Governance; Education & Training; Entrepreneurship, Innovation, & Business Creativity**
- **High-Level Political Support for ST&I Process (Deputy Prime Minister)**
- **Inter-ministerial commitment** for continuous support for the ST&I Policy

**ST&I Policy process initiated by Tongans for Tongans  
with contribution from external partners**



# Lessons Learned

- **ST&I Initiatives and Talents exist in Tonga** but are hidden by role in the workplace, employment sector, a culture of humbleness and lack of opportunity for exposure.
- **Sharing of ST&I knowledge, achievements and experience among sectors and with the public** at large encourages ST&I collaboration in Tonga.
- The **right champions, the enabling political environment and internal & external resources** are necessary to drive and implement the ST&I Policy in Tonga.
- International contribution and **shared facilitation can speed up the ST&I Policy development** process.



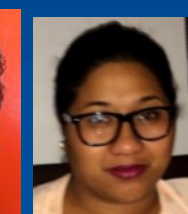
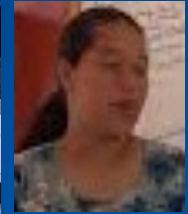
# Tonga ST&I Policy Initiation Team and Supporters



Ministry of  
Lands,  
Survey and  
Natural  
Resources



The  
German  
Aerospace  
Center  
(DLR)



# Malo 'aupito

## Sincere Thanks!



Grant Agreement 609490

Seed-funding grant  
administered by:

**The Association  
of Commonwealth  
Universities**

