

# **National Communications on Climate Change**

**Mitigation & Climate Change Reports Division  
In-house Training for Department of Climate Change  
Friday 20<sup>th</sup> March 2021**

**Outputs, sub-outputs & Staff allocation**

**1. National Greenhouse Gas Inventory (NGHGI)**

- \*Sectoral GHGI
- 1. Energy
- 2. AFOLU
- 3. Waste
- 4. IPPU
- \*GHGI Database Management System
- \*Awareness Materials

All Division's Staff

**2. Nationally Determined Contributions (NDC)**

- \*INDC, Second NDC
- \*NDC Review
- \*Implementation Roadmap
- \*Investment Plan
- \*Project Pipeline
- \*NDC mainstreaming
- \*Gender Analysis
- \*Progress Report
- \*Awareness Materials
- \*Policy Paper/Action plan on MPAs and Food and Agriculture
- \*NDC Finance Strategy
- \*Capacity Building Trainings

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**3. Long-term Low Emissions Development Strategy (LT-LEDS)**

- \*Phase I
- \*Phase II
- \*LEDS Document
- \*Awareness Materials
- \*Initial implementation steps

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**4. Mitigation Projects**

- \*Development of Project Concept Notes & Proposals
- \*Support for external Mitigation Project in & outside of DCC

All Division's Staff

**5. Fourth National Communication**

- \*National Circumstances
- \*NGHGI
- \*Vulnerability & Adaptation Assessments
- \*Mitigation Analysis
- \*Technology Transfer
- \*Research & Systematic Observation
- \*Education, training and public awareness
- \*Capacity-building
- \*Information & Networking
- \*Constraints, gaps and related needs
- \*Awareness Materials

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**6. First Biennial Update Report**

- \*National circumstances
- \*NGHGI
- \*Mitigation actions & effects
- \*Constraints, gaps and related needs
- \*Any other info

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**7. National Measurement, Reporting and Verification System**

- \*National MRV framework
- \*MRV of – emissions, policies and mitigation-related support
- \*Awareness Materials

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**8. Others**

Other Tasks

All Division's Staff



# Outline

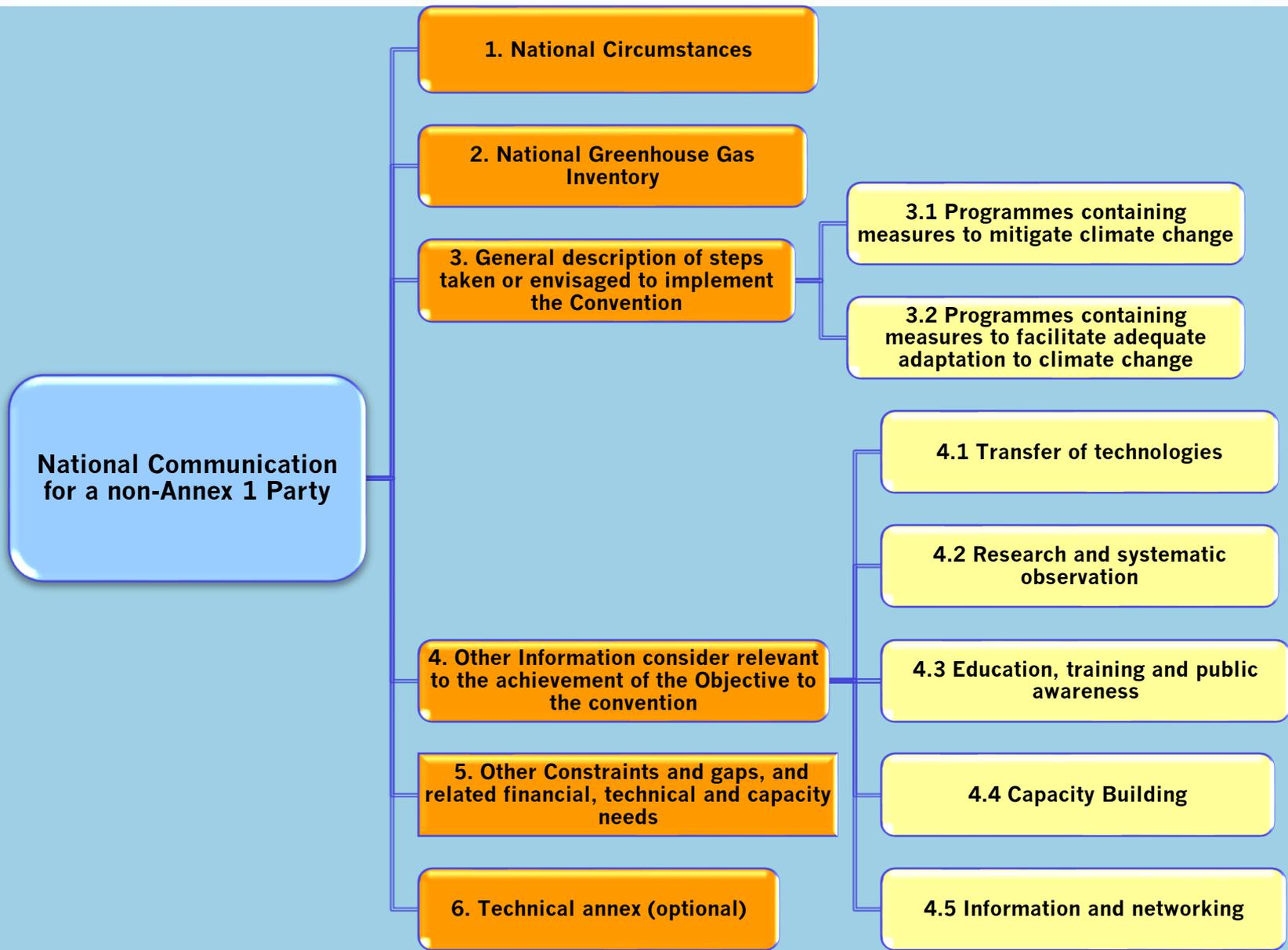
- **Background of National Communication (NC)**
  - **Definition of National Communication**
  - **Key Components of NC**
  - **National Communication Process**
  - **Tonga's National Communication Status**
  - **Significance of NC**
- **Measures to facilitate adequate adaptation to climate Change**
  - **Vulnerability & Adaptation (V&A) Assessments**
  - **Purpose of V&A section in the NC**
  - **Key steps in planning a V&A Assessment**
  - **Experiences from Tonga's TNC Project**
- **Q&A**

## **What is a National Communication (NC)?**

It's a report that each Parties to the UNFCCC are required to report periodically on their activities to implement the provisions of the Convention with the following elements of information:

- National inventory of anthropogenic emission
- General description of steps taken by the Party to implement the Convention
- Other relevant information that the party considers to the achievement of the UNFCCC's objective.

# Key Components of National Communications



# Tonga's National Communication Process



# Tonga's National Communication Status

<b>National Communication Report</b>	<b>Implemented by</b>	<b>Year of Submission to UNFCCC</b>
Initial National Communication Report (INC)	Department Environment	2005
Second National Communication Report (SNC)	Ministry of Environment and Climate Change (MECC)	2012
Third National Communication Report (TNC)	Ministry of Meteorology, Energy, Information, Disaster, Environment, Climate Change and Communication (MEIDECC)	2020
Fourth National Communication Report (4NC)	MEIDECC	2025

# Significance of NC

- Medium for the exchange of the information on how UNFCCC parties are implementing the convention
- Highlight issues, gaps, constraints, faced by the parties
- Help Conference of the Parties (COP) to the UNFCCC assess overall implementation of the Convention
- Medium for presentation of information in a consistent transparent comparable and flexible manner
- Guides the GEF in providing financial resources to parties
- A national planning document for developing projects and other financial resources
- A reference materials for concept notes, proposals, and other academic/research purposes

## 3.2 Measures to facilitate adequate adaptation to climate change

Parties to the UNFCCC are encourage to provide information on



### **a. Parties vulnerability to climate change, including;**

- scope of their vulnerability and adaptation (V&A) assessment, including identification of vulnerable areas that are most critical
- description of the approaches, methodologies, tools used for the V&A assessment
- Limitations of the V&A assessment
- Vulnerability to the impact of, and adaptation to, climate change in key vulnerable areas

### **b. Adaptation measures being taken specific needs and concerns**

- A summary of concrete adaptation action in each vulnerable sectors
- Evaluation of adaptation strategies and measures
- Policy frameworks (NAPs) and plans and policies for developing and implementing adaptation strategies and measures

# Definitions

**Vulnerability** : The degree to which a system is susceptible to , or unable to cope with, dealing with the negative impacts of climate change (including climate variability and extreme events)

**Adaptation:** Adjustment in natural or human systems in response to their effects, which moderates harms or exploits beneficial opportunities (e.g. reactive, no regret, implemental, transformational adaptations)

## Types of Assessments

- a. **Impact** – examines biophysical impacts, no consideration of adaptations
- b. **Vulnerability** – assessment of impacts and reactive (autonomous) adaptation
- c. **Adaptation** – examines adaptation responses that can be done now or in future in anticipation of climate change impacts and to reduce vulnerability

# Purpose of the V&A section in the NC

- **Convey** the results of V&A assessments
  - a) Understand **greatest** vulnerabilities
  - b) Identify most **urgent** adaptation measures
  - c) Enable **effective interpretation** of V&A results
- Present **clear and concise** description and synthesis
- **Inform** policy makers, decision makers and the public about the consequences of climate change and options to address those consequences
- Promote climate change **mainstreaming**.

## **\*Note that:**

- No single right approach to V&A Assessment
- V&A doesn't have to address the specifics of each adaptation option
- V&A assessments vary in terms of sectors, timeframe (past, current & future) and geographic scope

# Key steps in planning a V&A Assessment

1

- Understand the context of the assessment

2

- Identify objectives, outcomes and audience

3

- Determine the scope of the assessment

4

- Determine the type of assessment and scenarios

5

- Prepare an implementation plan

# Experiences from Tonga's TNC Project

- Identification of vulnerable sectors
- V&A methods and tools available for V&A assessment works
- V&A Sector Synthesis Report
- Technology Needs Assessment (TNA)

# Vulnerable Sector Areas identified in TNC Report

- Fisheries



- Agriculture



- Coastal zones



- Infrastructures



- Human Health



- Lands and GIS



- Water (Rural & Urban)



- Disaster Management



- Biodiversity



# Methodologies & Approaches

Methods/Frameworks	Description
Intergovernmental Panel on Climate Change – <i>Technical Guidelines for Assessing Climate Change Impacts and Adaptations, 1994</i>	Contains examples of first generation approaches to the assessment of vulnerability and adaptation (V&A). The guidelines have an analytical emphasis and focus on identification and quantification of impacts
UNFCCC Resource Guide for preparing the National Communications of Non-Annex 1 Parties – <i>Module 2 Vulnerability and Adaptation to Climate change</i>	Provide some of the main methods, tools and data being used by non-Annex 1 Parties to assess V&A to climate change, including advantages and limitations
United Nations Development Programme (UNDP) – <i>Designing Climate Change Initiatives : A UNDP Toolkit for Practitioners (2010)</i>	Adaptation decision focus. Problem definition and adaptive solution approach.
UNDP, United Nations Environment Programme (UNEP), Global Environment Facility (GEF)- <i>Applying Climate Information for Adaptation Decision-Making (2011)</i>	Provides an adaptation framework that targets experts in the climate risks and adaptation realm. It also provides some comparisons among prominent adaptation frameworks.
UNFCCC Least Developed Country Expert Group (LEG): <i>National Adaptation Plans; Technical Guidelines for the National Adaptation Plan Process (2012)</i>	Provide guidance for development of National Adaptation Plans (NAPs)
United Nations University – <i>Weathering uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation (2012)</i>	Explains how indigenous knowledge can be used in decision-making and V&A frameworks

# Example of selected tools for V&A assessment of coastal resources

**Table V-5. Strengths and limitations of selected tools for vulnerability and adaptation assessment of coastal resources**

Method	Strengths	Limitations
United Nations Environment Programme handbook methodology	Accessible, straightforward approach for regional/national scale	Designed to assist developing countries. Useful for pilot studies to provide input for more detailed assessments
Shoreline planning method	Widespread application around the world's coasts in coastal management	Requires customizing to individual coastal zone management administrative systems
Coastal vulnerability indices (CVI)	Generally easily calculated and employed for rapid vulnerability assessment	Requires customizing of variables for case-by-case use
Community vulnerability assessment tool (CVAT)	Supports the linking of environmental, social and economic data in the coastal zone	Requires customizing to environments with different suites of hazards. Access to appropriate data not always available
Dynamic interactive vulnerability analysis (DIVA)	Provides an overview of climatic and socio-economic scenarios and adaptation policies on regional and global scales	Provides coarse-scale resolution of potential coastal impacts at a national scale. Limited ability to customize using national data
CoastClim and SimClim	Useful decision support aid for changed climate conditions, including coastal erosion and inundation	Coastslim uses a single method for simulating future coastal change
Smartline	Cost effective and rapid geomorphic mapping of coastal sensitivity	Adaptation to local and site-specific scale will require testing and validation
Community vulnerability and adaptation assessment and action	Innovative approach that uses local experiences in relation to climate variability, change over time and extreme events	Modelling and scenario generation play a part in the process, although not as a starting point Can be difficult to gain access to relevant skills and expertise

Source: Coastal Zone Management. 2008. *Coastal Vulnerability and Adaptation Assessment: A Contribution to the Compendium of Coastal Resources Tools and Methodologies*. (unpublished report. Available at <[www.coastalmanagement.com](http://www.coastalmanagement.com)>)

Example taken from TNC : Key Vulnerabilities being addressed and relative adaptation tools/methods used, issues by Land and GIS

Vulnerability/ Extreme Events	Key Issues	Adaptation Process	Tools/Methods
Flooding Sopu/Kolomotu'a	identifying Areas of worst flooding . Identifying distances to possible site for discharging flood water . Identifying affected land parcels	<ul style="list-style-type: none"> <li>. Mapping of affected areas</li> <li>. Identify discharge sites</li> <li>. Land parcels information</li> </ul>	GIS technology Satellite imageries . <b>LIDAR data</b> . sub-meter Contour data . ArcGIS software . GIS capacity (skills} .. Land parcels data



# Sector synthesis reports

- Conducted training on V & A assessment for V&A TWG
- Development of a synthesis report for each V&A sectors that highlighted:
  - a) Key priorities and needs for each sector
  - b) Current climate risks in each relevant sector
  - c) How risks are being addressed in each sector
  - d) Key priorities and needs for adaptation

\*Sector synthesis reports formed the basis for the sectoral V&A Assessments and the V&A Assessment Chapter of the TNC Report.

# Technology Needs Assessment

- Identify, evaluate and prioritize technological means for both mitigation and adaptation, in order to achieve sustainable development ends
- Country-driven activities that identify and determine mitigation and adaptation technology priorities
- TNA report was integrated into the TNC Report.



**Any Questions?**

**Malo Áupito**