



Tonga Climate Change Policy

A Resilient Tonga by 2035



FEBRUARY 2016



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Prepared by the Department of Climate Change, Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications in consultation with the JNAP on CCDRM Technical Working Group and national stakeholders, Tonga.



Funded by the European Union through the Secretariat of the Pacific Community which implemented the Global Climate Change Alliance: Pacific Small Island States Project

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Foreword

Tonga is a Small Island Developing State and it is extremely vulnerable to the adverse impacts of climate change and disaster risks. The geographical, geological and socioeconomic features of Tonga have classified itself as one of the countries in the world most at risk to these impacts and risks. Government of Tonga understands these impacts and risks to the sustainable development of the country hence considers these issues as high priorities in its National Strategic Development Framework 2015-2025.

In 2005, Tonga had completed the preparation of its Initial National Communication (INC) on Climate Change Report, the ultimate output of its INC Project. This report was also approved by Cabinet, Tonga and the Secretariat, Bonn, Germany. One of the major capacity development needs that was addressed in this report is to develop a National Climate Change Policy. At that time Government of Tonga has been aware of the importance of including environmental issues in its national strategic plan even though climate change issues were not considered as a priority. A Climate Change Policy was therefore developed to address these issues. It was certainly a major step forward and it also served as to define the position, direction and responsibilities of the Government and relevant stakeholders in Tonga on these issues, short and long term. This Policy was approved by His Majesty's Cabinet in 2006. It was revised in 2015 through a wide consultation workshops which involved various stakeholders in Tonga.

This revised climate change policy focus towards building a Resilient Tonga by 2035. In establishing this goal we recognise that it is ambitious as the true cost to build resilience will involve billions of dollars and this is without considering loss and damage.

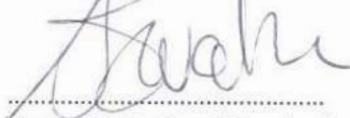
While the goal of a Resilient Tonga by 2035 is ambitious, the Policy Objectives presented in this policy towards this goal are achievable within the next five years. To ensure that these Objectives will be met, a revised Joint National Action Plan on Climate Change and Disaster Risk Management (JNAP 2) will be developed aiming at their implementation. The intent of both this revised policy and the revised JNAP is that they provide the overarching framework for development of a Resilient Tonga. It is therefore anticipated that all relevant sector policies and plans, as well as community development plans and island strategic development plans, will be aligned with this policy and the revised JNAP. Of particular importance is that they are all aligned with the goal of a Resilient Tonga by 2035 and the targets for achieving this.

Tonga had completed the preparation of its Intended Nationally Determined Contributions (INDC) under the United Nations Framework Convention on Climate Change (UNFCCC) and it was submitted at the UNFCCC Conference of the Parties 21 (COP 21) that was held in Paris, France, 2015. This INDC is consistent with this policy.

This Climate Change policy was developed with the assistance from the European Union through the Secretariat of the Pacific Community which implemented the Global Climate Change Alliance: Pacific Small Island States Project. Support of these organisations is gratefully acknowledged.

I also sincerely thank the team from the Department of Climate Change for their efforts in facilitating the development of this policy and national stakeholders in Tonga, from government ministries, non-government organisations, civil societies, statutory boards, women's groups and youth groups who were willing to attend and contribute during the policy consultation workshops. Their participation is important as climate change affects all of us and an inclusion approach is essential for developing this key policy.

Faka'apa'apa lahi atu,



.....
Honourable Siosaia Sovaleni

Hon. Deputy Prime Minister and Minister for Climate Change
TONGA.



Acronyms and Abbreviations

CSO	Civil Society Organisation
CDP	Community Development Plan
DRR	Disaster Risk Reduction
COP21	21 st Conference of the Parties to the UNFCCC
GCCA: PSIS	Global Climate Change Alliance: Pacific Small Islands States
GHG	Greenhouse Gas
GIS	Geographical Information System
IPCC	Intergovernmental Panel on Climate Change
JNAP	Joint National Action Plan for Climate Change Adaptation and Disaster Risk Management
MEIDECC	Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change, and Communications
NGO	Non-Government Organisation
PACCSAP	Pacific-Australia Climate Change Science and Adaptation Planning Program
PIFACC	Pacific Islands Framework for Action on Climate Change
PLG	Polynesian Leaders Group
RFA	Pacific Disaster Risk Reduction and Disaster Management Framework for Action, commonly referred to as the Regional Framework for Action
SLR	Sea Level Rise
SPC	Secretariat of the Pacific Community
SRDP	Strategy for Climate and Disaster Resilient Development in the Pacific
TSDf	Tonga Strategic Development Framework
UNFCCC	United Nations Framework Convention on Climate Change

1. Introduction

1.1 Policy Purpose and Process

Policy Purpose

The purpose of this Tonga Climate Change Policy is to provide a clear vision, goal, and objectives to direct responses to climate change and disaster risk reduction over the next five years.

The policy, and the associated revised Joint National Action Plan for Climate Change Adaptation and Disaster Risk Management (JNAP), is not intended to replace or duplicate sector specific policies and plans. Rather, it is intended to provide an overarching context and guiding framework with policy objectives that for the most part will require multi-sector coordination. This recognises that Climate Change is the single biggest issue that will determine the future of Tonga over coming decades and will require a ‘whole of Tonga’ level of cooperation and coordination.

Policy process

The first Tonga Climate Change Policy was developed in 2006. It has not been reviewed or revised since that time.

A more structured process will be followed with this revised Tonga Climate Change Policy, involving:

1. A biennial review
2. Development of a further revised Tonga Climate Change Policy in five years’ time
3. Full alignment of this revised Tonga Climate Change Policy with the revised JNAP

The policy objectives will become the objectives for the revised Joint National Action Plan for Climate Change Adaptation and Disaster Risk Management (JNAP). The sub-objectives and outcomes of the policy will become the basis for activities in the revised JNAP which are Specific, Measurable, Achievable, Realistic, and Time-bound (SMART), and are guided by the longer-term targets presented in this policy. The policy is also linked to the new Tonga Climate Change Fund Bill.

1.2 Policy Approach

In the context of this policy the word resilience is used to encompass an integrated approach to adaptation, disaster risk reduction, and mitigation

This revised Tonga Climate Change Policy is based on a new approach; one which is multi-faceted, cross-sectoral, gender inclusive, equitable, and with a strong emphasis on community ownership supported by strong governance. The overall focus is towards the goal of ‘A Resilient Tonga’, aimed at achieving outcomes that are realised more widely than can be achieved through a more conventional, compartmentalised approach. Rather than address climate change adaptation, mitigation and disaster risk reduction in a fragmented manner, a holistic approach is taken to build resilience. The emphasis is on re-imagining and re-designing the future of Tonga to ensure that its’ people are able to respond as proactively as possible to the unfolding effects of climate change and other related global and local changes.

1.3 Policy Context and Linkages

National

The overarching guidance for the Tonga Strategic Development Framework 2015-2025 (TSDF 2015-2025) is the Motto, ***God and Tonga are my inheritance***, established by Tupou I. This means that *“Tonga is our inheritance and our wealth in the form of our people, our land, and our strong Christian and traditional values that underpin our culture. We have inherited this from our families. We must pass it on to our children in an improved condition. This requires us to be wise and prudent in our use of our inherited wealth. Our plans, strategies and policies must be supportive to our inheritance and they must be inclusive and sustainable, so that we leave a more valuable inheritance for those who follow us.”*

To support the above the TSDF 2015-2025 is designed to achieve the National Impact:

“A more progressive Tonga supporting a higher quality of life for all.”

The achievement of this is supported by seven National Outcomes:

- A. a more inclusive, sustainable and dynamic knowledge-based economy
- B. a more inclusive, sustainable and balanced urban and rural development across island groups
- C. a more inclusive, sustainable and empowering human development with gender equality
- D. a more inclusive, sustainable and responsive good-governance with law and order
- E. a more inclusive, sustainable and successful provision and maintenance of infrastructure and technology
- F. a more inclusive, sustainable and effective land administration, environment management, and resilience to climate and risk
- G. a more inclusive, sustainable and consistent advancement of our external interests, security and sovereignty

While this Tonga Climate Change Policy is most clearly aligned with National Outcome F: “a more inclusive, sustainable and effective land administration, environment management, and resilience to climate and risk”, it is strongly aligned with all seven National Outcomes. This alignment recognises that climate change will increasingly affect all aspects of life in Tonga, and will threaten our inheritance and our wealth; ‘our land, our people and strong Christian and traditional values that underpin our culture’.

The seriousness of this cannot be underestimated. Tonga cannot afford to sit and wait for the sea level to rise, for more severe droughts and floods, and for more damaging cyclones, while emissions of fossil fuels continue unabated. A bold vision is required which must be translated into action that is supported by the international community.

This policy therefore also provides a supporting framework that is aligned with the TSDF 2015-2025 and encourages alignment with all relevant sector policies and plans to ensure that proactive measures are taken to build a resilient Tonga. This further requires strong engagement with and ownership from the community, with resilience an integral part of all community development plans (CDPs) and Island Strategic Development Plans.

Regional

The Strategy for Climate and Disaster Resilient Development in the Pacific (SRDP) aims to strengthen the resilience of Pacific Island communities to the impacts of slow and sudden onset natural hazards by developing more effective and integrated ways to address climate and disaster risks, within the context of sustainable development.

The strategy has three strategic goals:

1. Strengthened integrated risk management to enhance climate and disaster resilience
2. Low carbon development
3. Strengthened disaster preparedness, response and recovery

The strategy will succeed the existing separate regional frameworks on disasters and climate change (respectively, the Pacific Disaster Risk Reduction and Disaster Management Framework for Action, commonly referred to as the Regional Framework for Action or RFA, and the Pacific Islands Framework for Action on Climate Change (PIFACC)), which both end in 2015.

Tonga's first JNAP was the first of its kind in the Pacific region and provided the lead for what is now embedded in the SRDP. This policy is strongly aligned with the first two strategic goals of the SRDP. Furthermore Tonga is again taking the lead with an integrated resilience response approach which suits a small island nation that is one of the front-line countries in the fight against climate change.

The following is abbreviated from the Polynesian Leaders Taputapuātea Declaration (16 July 2015):

“The Pacific Ocean is a vital regulator of climate for the whole world and needs a voice. We, the Polynesian Leaders Group, are the voice for the Pacific Ocean, and wish to carry our strategic vision to deal with the adverse effects of climate change by limiting global warming below 1.5°C and having access to tools and means to adapt to the adverse impacts caused by climate change.

... Climate change and its adverse impacts are poisoning our sea, making our lands infertile and threatening the foundation of our identity as Polynesian peoples. Our children's future is in doubt if the cause of climate change is not addressed and if we are unable to adapt to its impacts.”

Within the declaration three crucial points are raised, to be voiced during the UNFCCC's 21st session of the Conference of the Parties (COP 21):

- “The objective to limit global warming to below 1.5°C by 2100: we reaffirm the call for urgency and the commitment of the international community to a legally binding framework reflecting this objective.
- Green Climate Fund: in the face of the urgency of the fight against climate change, we ask the international community to have the political courage and to provide the financial tools so that our ability to adapt may express itself... The PLG calls for Oceania to receive its fair share of climate resources from all available sources of funding to address capacity building and technology transfer relating to climate change and its adverse impacts.
- Recognise that loss and damage is a critical element for building resilience against climate change and that this is reflected in the legally binding agreement.”

International

The UNFCCC is the key international agreement aimed at stabilizing Greenhouse Gas (GHG) concentrations at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system. It entered into force on 21 March, 1994. Tonga became a signatory party to the UNFCCC on 20 July 1998. The ultimate objective of this agreement is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the global climate system.

Tonga has completed its first and second national communications under the UNFCCC and the third is due for completion in 2016.

2. Policy Vision and Mission Statement

2.1 Policy Vision Statement

A resilient Tonga to the impacts of climate change and climate-related disaster risks to protect and safeguard the country for present and future generations.

2.2 Policy Mission Statement

To develop a resilient Tonga through an inclusive, participatory approach that is based on good governance, builds knowledgeable, proactive communities and supports a strong sustainable development pathway.

3. Policy Goal

3.1 A Resilient Tonga by 2035

The goal of the policy is to achieve the vision of a Resilient Tonga by 2035. This will be realised through achievement of specific targets. With its five year lifetime this policy provides clear progression towards these targets.

Figure 3.1: A vision map of a Resilient Tonga

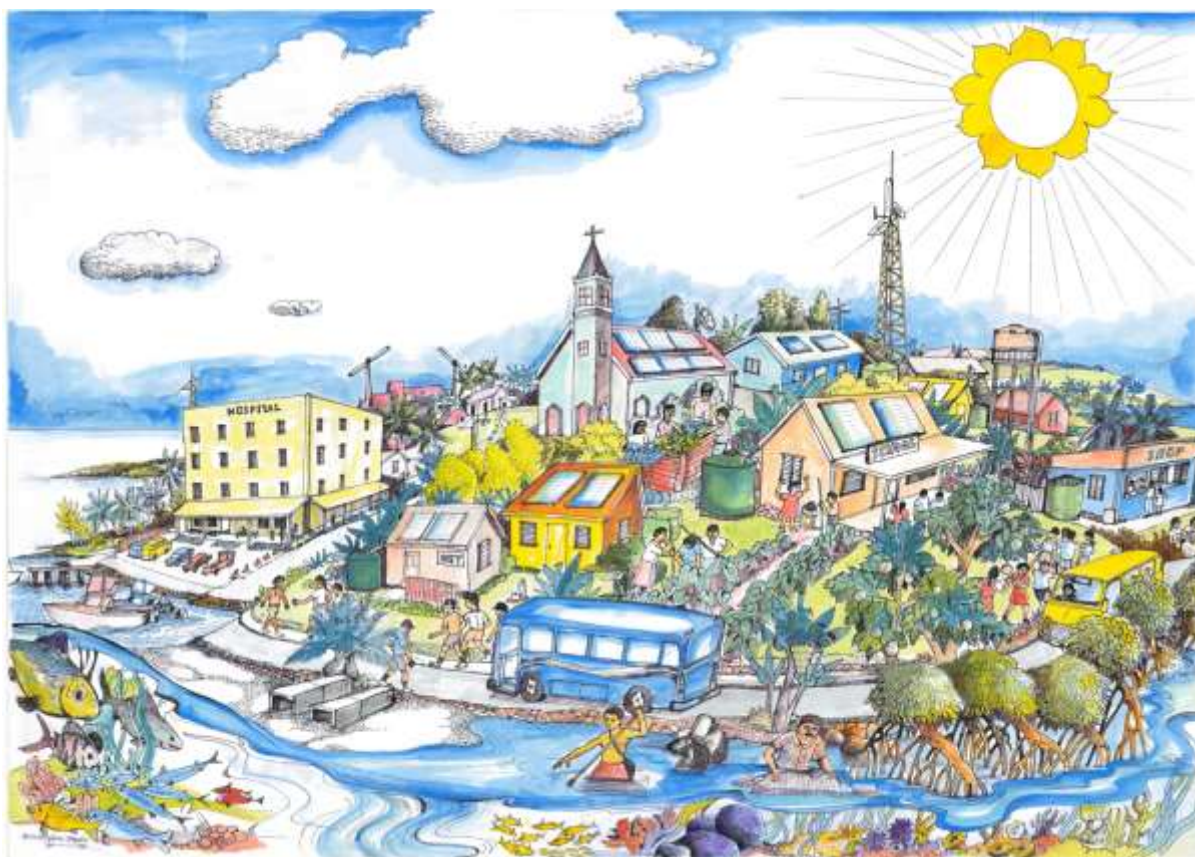
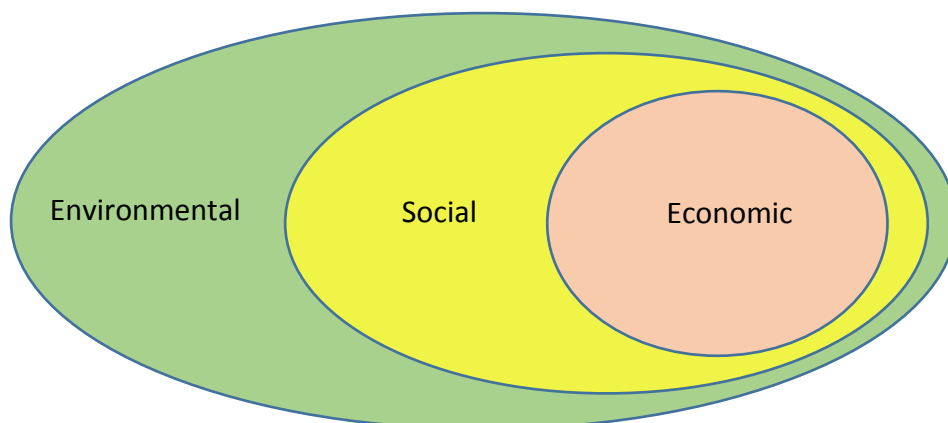


Figure 3.2: The relationship between the environmental, social, and economic targets for a Resilient Tonga



3.2 Targets for a Resilient Tonga

1.	Every coastal community has a special management area and protected coastal environment
2.	Redesigned, resilient, roads, coastal areas, buildings, and other infrastructure
3.	Resilient homes, schools, and community halls (i.e. incorporating design for Category 5 cyclones, a minimum of 30,000 litre water storage capacity for homes, solar power and hot water, bio-digesters for biogas production, organic gardens, food preservation)
4.	A transport system that is not reliant on fossil fuels
5.	100 percent renewable energy
6.	Resilient low chemical input or organic farming systems
7.	30 percent of land in Tonga utilised for agro-forestry or forestry
8.	Native biodiversity is fully protected and enhanced
9.	The capacity for food self-sufficiency in times of crisis, and significantly reduced reliance on imported food
10.	Well managed water resources and sufficient water for all in times of shortage
11.	Development and full implementation of a zero waste policy
12.	All families and communities understand climate change and the need for disaster preparedness and have taken action to be resilient
13.	Strengthened parliamentary and institutional capacities working towards achieving resilience targets
14.	Resilience measures are mainstreamed into applicable laws and are integral to all public

	and private sector policies, plans and development programmes and projects
15.	Resilient agriculture with enhanced crop production and food security
16.	Education for resilience is incorporated into curricula at all levels of primary, secondary and tertiary education
17.	A gender responsive and equitable society
18.	An innovative and proactive private sector that is a model for resilience
19.	An economy that works harmoniously with the needs for a resilient environment and society
20.	Sustainable funding for climate change and resilience building needs

3. Policy Guiding Principles

Implementation of the Tonga Climate Policy will be guided by the following principles:

1. A Resilient Tonga for the future

A Resilient Tonga requires a redesigned approach that brings together traditional knowledge and values with 21st knowledge and technology, in order to address the realities of climate change.

2. Strong leadership and good governance

The realisation of a Resilient Tonga will require clear, strong and consistent governance.

3. A holistic, multi-faceted, multi-sectoral approach

A holistic, multi-faceted, multi-sectoral approach will be adopted. Inherent in this approach will be the precautionary principle, ensuring that benefits apply more broadly than just to climate change.

4. Integration and mainstreaming

The design and development of a Resilient Tonga will require proactive change involving an integrated approach to adaptation, disaster risk reduction, and mitigation. This will be mainstreamed into all applicable laws, policies, plans and activities from national to local level.

5. Community ownership, stakeholder participation and collaboration

The realisation of a Resilient Tonga will require strong community ownership, participation of all stakeholders, and collaboration between all government ministries as well as between government, the private sector and civil society.

6. Equity and fairness

Initiatives, programmes and projects will ensure the equitable accessibility and distribution of all benefits, information and support to marginal and disadvantaged groups, recognising their differing vulnerabilities to climate change.

7. Gender considerations

In recognising that men and women face different social, environmental, and economic situations, gender issues will be considered in all planning and implementation processes. A better understanding of the vulnerabilities and capacities of different gender groups to deal with climate change will be promoted.

8. On-going capacity development

On-going capacity development will be required at all levels to ensure a sustained effort towards the common goal of building resilience.

9. Long-term sustainability

Initiatives and programmes will be designed to deliver long-term, positive, environmental, social, and economic benefits that are founded on ensuring self-sufficiency at all levels of Tongan society.

10. Multi-disciplinary science and evidence based responses

Policy formulation, planning and action will be based on scientifically and technically sound data and information, while recognising the value of traditional knowledge.

4. Policy Objectives and Outcomes

Effective implementation of this policy requires a fully integrated approach to ensure that all the identified Policy Objectives and associated Policy Outcomes work together as a coherent whole. This is captured in Figure 5.1, which also identifies the planning process which links community planning to Island Strategic Development Plans, national policies and plans, and the TSDF 2015-2025.

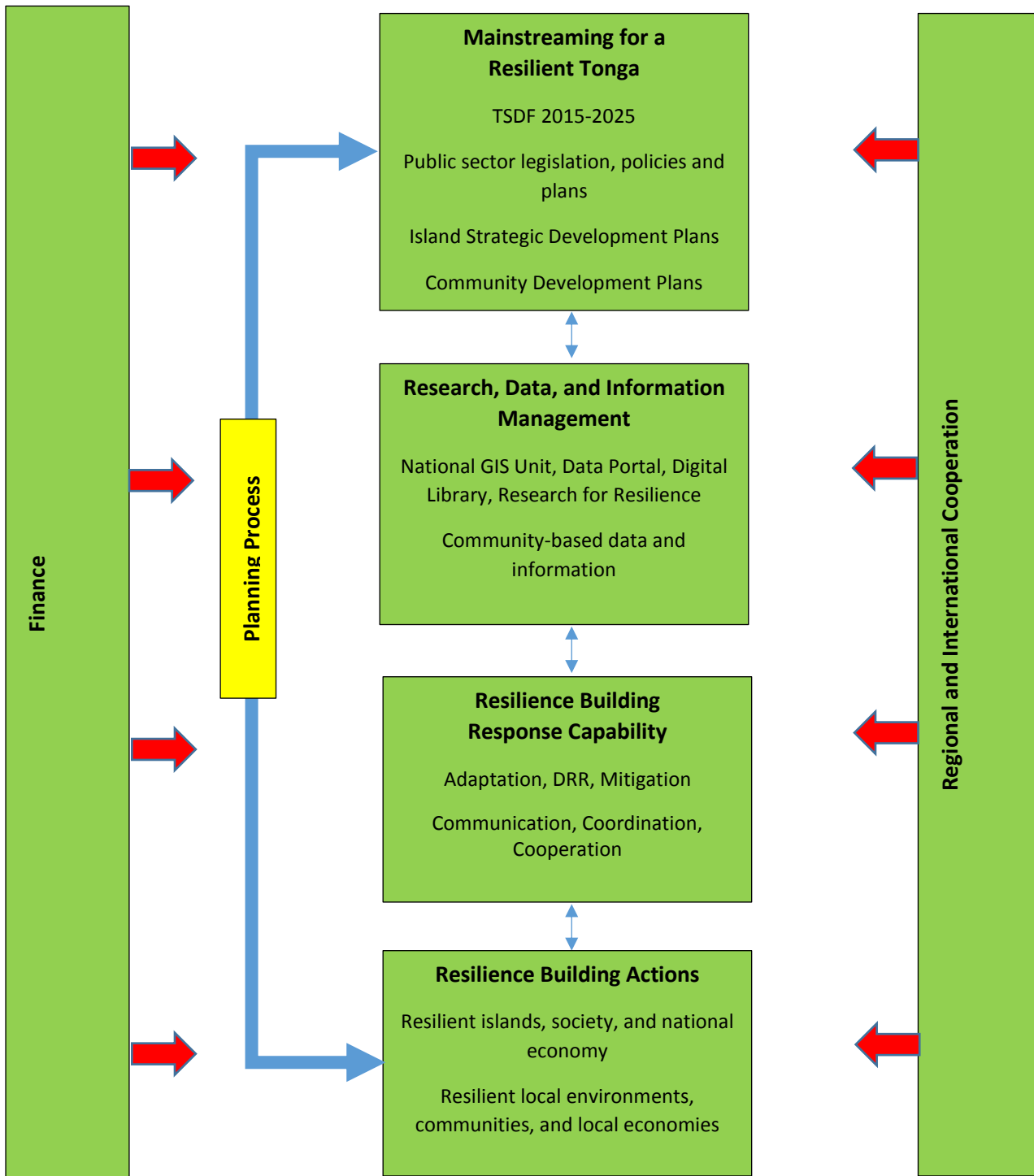


Figure 5.1: Schematic showing the inter-relationship between the six policy objectives and the important linkage with the planning process

The following Objectives and associated Outcomes are to be achieved by 2020. They are all aimed towards achieving the targets for a Resilient Tonga by 2035.

5.1 Objective 1: Mainstreaming for a resilient Tonga

To fully mainstream the goal of a Resilient Tonga into government legislation, policies, and planning at all levels

Sub-objectives

- To strengthen existing decision-making structures, in particular the National Environment and Climate Change Committee and the Environment and Climate Change Standing Committee in Parliament.
- To fully embed the goal of a Resilient Tonga through planning, design and execution of programmes in all government ministries, with supporting guidelines (incorporating the targets for a Resilient Tonga) and on-going capacity development; with all climate change staff across all Ministries required to report to and meet regularly with the Department of Climate Change to ensure a fully coordinated approach.
- To implement a fully coordinated resilience planning approach across all relevant government ministries to ensure that they all have actionable and costed plans with the targets for a Resilient Tonga fully integrated (with a priority focus on biodiversity, education, energy, fisheries, forestry, health, infrastructure, land, water, and youth), and supporting policies and legislation where necessary.
- To develop standard resilience guidelines (incorporating the targets for a Resilient Tonga) for all community engagement activities which are to be implemented through strengthened partnerships between government, CSOs, and the private sector, with MIA strengthened in its coordinating role, and all Community Development Plans and Island Strategic Development Plans progressively aligned with the goal of a Resilient Tonga.

Outcomes

- Existing decision making structures are strengthened, in particular the National Environment and Climate Change Committee and the Environment and Climate Change Standing Committee in Parliament.
- The goal of a Resilient Tonga is fully embedded in the thinking and planning of all government ministries, with supporting guidelines (incorporating the targets for a Resilient Tonga) and on-going capacity development; with all climate change staff across all Ministries reporting to and meeting regularly with the Department of Climate Change.
- A fully coordinated resilience planning approach across all relevant government ministries is implemented with all having actionable and costed plans with the targets for achieving a Resilient Tonga fully integrated.
- Standard resilience guidelines (incorporating the targets for a Resilient Tonga) are developed for all community engagement activities; they are implemented through strengthened partnerships between government, CSOs, and the private sector; MIA is strengthened in its coordinating role; and all Community Development Plans and Island Strategic Development Plans are aligned with the goal of a Resilient Tonga.

5.2 Objective 2: Research, Monitoring and Management of Data and Information

To implement a coordinated approach to the collection, monitoring, management and use of all relevant data and information; and to develop a coordinated, multi-sectoral approach to research for building a Resilient Tonga

Sub-objectives

- To increase national capacity on data and information collection to support resilience building taking into account gender analysis.
- To develop effective data and information hubs, building on the existing environment and climate change portal, that make all relevant data and information readily available to all (including private sector, CSOs, and communities) focused on achieving a Resilient Tonga. Specific data and information hubs of importance include a National GIS Unit, Data Portal, and Digital Library.
- To develop fully operational monitoring and early warning systems, focusing in particular on ground water, soil health, and coastal monitoring, and a comprehensive climate early warning system.
- To develop and implement a fully coordinated, multi-disciplinary 'Research for Resilience Programme'.

Outcomes

- National capacity on data and information collection to support resilience building is increased taking into account gender analysis.
- Data and information hubs are established with all relevant data and information readily available to all.
- Fully operational monitoring and early warning systems are established, focusing in particular on ground water, soil health, and coastal monitoring, and a comprehensive climate early warning system.
- A fully coordinated, multi-disciplinary 'Research for Resilience Programme' is developed and implemented.

5.3 Objective 3: Resilience building response capability

To develop the capability for resilience building responses throughout government, the private sector, and civil society

Sub-objectives

- To establish necessary mechanisms to ensure that all government agencies, private sector, and CSOs are working together in a fully coordinated manner for all resilience building activities across all sectors.
- To implement on-going capacity building on resilience in a consistent and coordinated manner for all government ministries, the private sector, and civil society to ensure a ‘whole of Tongan society’ approach to achieving the goal of a Resilient Tonga.
- To implement a fully coordinated approach to community awareness raising on climate change and resilience involving all CSOs who are working with or are part of communities; including strengthening the important role of the arts and media in fostering the essential behaviour change that will be required throughout Tongan society in order to achieve a Resilient Tonga.
- To ensure that understanding of a Resilient Tonga is incorporated into all school and tertiary education curricula.

Outcomes

- Mechanisms are established to ensure that all government agencies, private sector, and CSOs are working together in a fully coordinated manner.
- On-going capacity building on resilience is implemented in a consistent and coordinated manner for all government ministries, the private sector, and civil society.
- A fully coordinated approach to community awareness raising and behaviour change on climate change and resilience is implemented, including strengthening the important role of the arts and media.
- Understanding of a Resilient Tonga is incorporated into all school and tertiary education curricula.

5.4 Objective 4: Resilience building actions

To implement actions that are designed towards the building of a Resilient Tonga by 2035 at national, island, and community level

Sub-objectives

- To begin the progressive implementation of national level actions from relevant sector plans that are aimed at achieving the identified targets for a Resilient Tonga by 2035.
- To fully implement Community Development Plans that are aligned with the goal and targets of a Resilient Tonga in 23 champion villages, one in each District throughout Tongatapu and the outer islands.

Outcomes

- National level actions from relevant sector plans that are aimed at achieving the identified targets for a Resilient Tonga by 2035 are progressively implemented.
- Community Development Plans that are aligned with the goal and targets of a Resilient Tonga are fully implemented in 23 champion villages, one in each District throughout Tongatapu and the outer islands.

5.5 Objective 5: Finance

To secure and mobilise the required finances and resources to build a Resilient Tonga by 2035

Sub-objectives

- To ensure that all relevant stakeholders have access to finance and resources to achieve the goal and targets for a Resilient Tonga through the Tonga Climate Change Fund.
- To develop and implement a development partners coordination mechanism for all relevant funding to ensure full alignment with the revised JNAP on climate change and disaster risk management.
- To develop and implement a strategy for supporting communities, including women, youth, and vulnerable groups to directly access relevant funding to support implementation of Community Development Plans that are fully aligned with the goals and targets of a Resilient Tonga.
- To develop simplified and harmonized procedures for disbursement of relevant funds to community level.
- To support effective and responsible financial management.

Outcomes

- All relevant stakeholders have access to finance to achieve the goal and targets for a Resilient Tonga through the Tonga Climate Change Fund.
- A development partners' coordination mechanism is developed and implemented for all relevant funding to ensure full alignment with the revised JNAP on climate change and disaster risk management.
- A strategy is developed and implemented for supporting communities to directly access relevant funding to support implementation of Community Development Plans that are fully aligned with the goals and targets of a Resilient Tonga.

- Simplified and harmonized procedures are developed for disbursement of relevant funds to community level.
- To support effective and responsible financial management.

5.6 Objective 6: Regional and International Cooperation

To develop and maintain strong regional and international partnerships and to contribute fully to all relevant negotiations aimed at the required transformation to a resilient and sustainable future

Sub-objectives

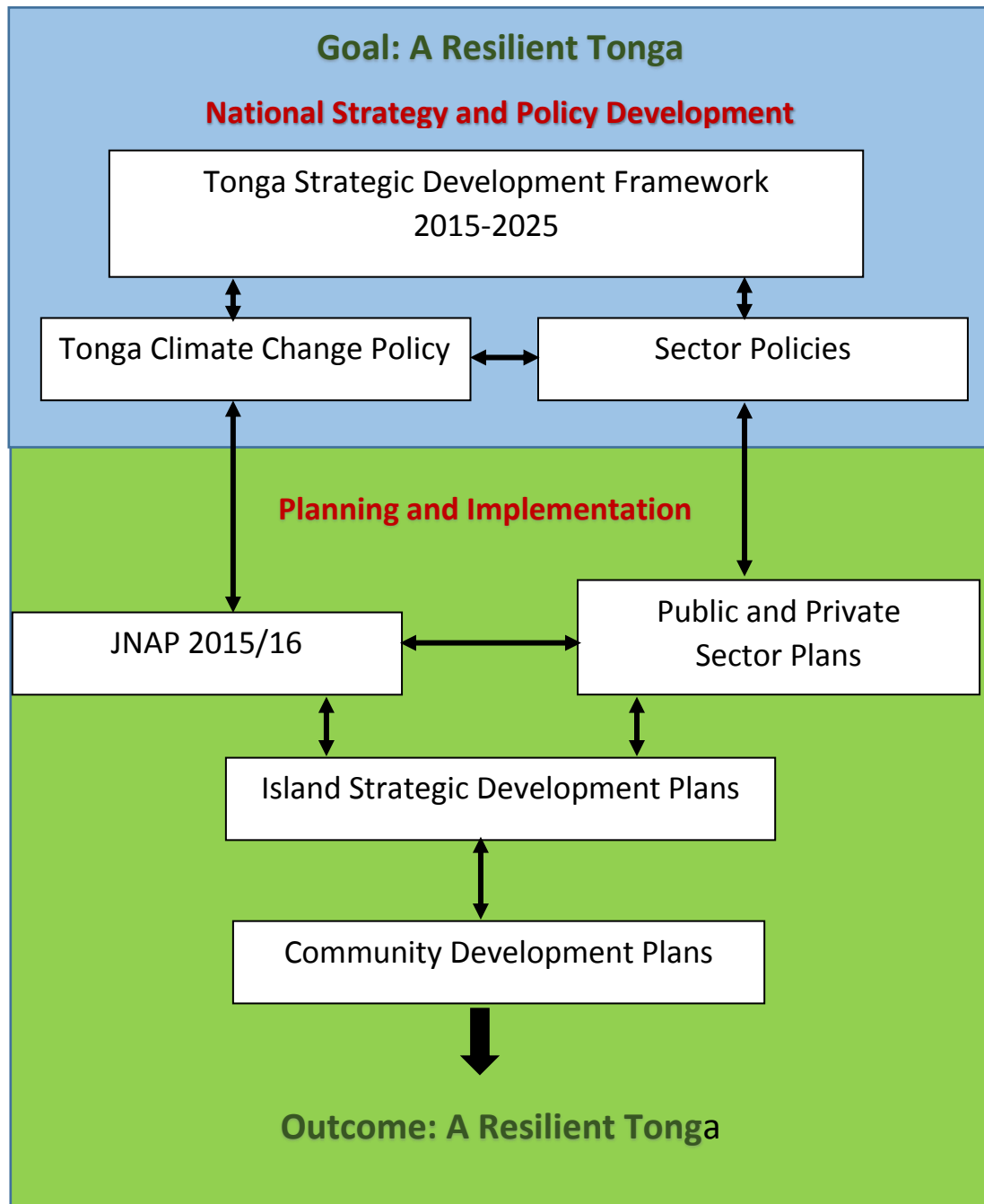
- To continue to participate in all relevant regional and international fora and negotiations, and to strongly promote the policy goal and associated targets of a Resilient Tonga by 2035.
- To identify and work with regional and international agencies who are best able to support the required transformation to a Resilient Tonga by 2035.

Outcomes

- The policy goal and associated targets of a Resilient Tonga by 2035 are strongly promoted through all relevant regional and international fora and negotiations.
- The transformation to a Resilient Tonga by 2035 is supported by regional and international agencies.

5. Implementation

This policy provides the vision, goal, and objectives for achieving a Resilient Tonga. The mechanism for implementation will be through the revised JNAP, along with all other plans (at sector, island, and community level) that are fully aligned with the goal and targets of this policy.



Annex 1: Climate change and climatic extremes

The Executive Summary of the Small Islands Chapter from the Fifth Assessment Report of the IPCC provides key points that are of high relevance to this policy. These are:

1. Current and future climate-related drivers of risk for small islands during the 21st century include sea level rise (SLR), tropical and extratropical cyclones, increasing air and sea surface temperatures, and changing rainfall patterns (*high confidence; robust evidence, high agreement*).
2. SLR poses one of the most widely recognized climate change threats to low-lying coastal areas on islands and atolls (*high confidence; robust evidence, high agreement*).
3. Given the inherent physical characteristics of small islands, the AR5 reconfirms the high level of vulnerability of small islands to multiple stressors, both climate and non-climate (*high confidence; robust evidence, high agreement*).
4. Small islands do not have uniform climate change risk profiles (*high confidence*).
5. There is increasing recognition of the risks to small islands from climate-related processes originating well beyond the borders of an individual nation or island. Such transboundary processes already have a negative impact on small islands (*high confidence; robust evidence, medium agreement*).
6. Adaptation to climate change generates larger benefit to small islands when delivered in conjunction with other development activities, such as disaster risk reduction and community-based approaches to development (*medium confidence*).
7. Adaptation and mitigation on small islands are not always trade-offs, but can be regarded as complementary components in the response to climate change (*medium confidence*).

The final point is provided in full because of its cautionary message:

8. The ability of small islands to undertake adaptation and mitigation programs, and their effectiveness, can be substantially strengthened through appropriate assistance from the international community (*medium confidence*). However, caution is needed to ensure such assistance is not driving the climate change agenda in small islands, as there is a risk that critical challenges confronting island governments and communities may not be addressed. Opportunities for effective adaptation can be found by, for example, empowering communities and optimizing the benefits of local practices that have proven to be efficacious through time, and working synergistically to progress development agendas.

The most recent report from the Pacific-Australia Climate Change Science and Adaptation Planning Program (PACCSAP) provides the following future projections to 2100 for Tonga:

1. El Niño and La Niña events will continue to occur in the future (*very high confidence*), but there is little consensus on whether these events will change in intensity or frequency;
2. It is not clear whether mean annual rainfall will increase or decrease and the model average indicates little change (*low confidence in this model average*), with more extreme rain events (*high confidence*);
3. Drought frequency is projected to decrease slightly (*low confidence*);
4. Ocean acidification is expected to continue (*very high confidence*);
5. The risk of coral bleaching will increase in the future (*very high confidence*);

6. Sea level will continue to rise (*very high confidence*).

Recent weather events in Tonga, particularly in Ha'apai (a sequence of drought, Cyclone Ian, and further drought), are a window to a future that will increasingly involve multiple stresses from the above along with pre-existing environmental, social, and economic stresses.

Climate change and extreme weather events are increasingly inter-related, the former being an underlying influence on the latter. Natural disasters, both from climate and geological hazards, will be an increasing cost to Tonga. The Tonga Country Risk Profile generated from the Pacific Catastrophe Risk Assessment and Financing Initiative concludes that: Tonga is expected to incur, on average, 15.5 million USD per year in losses due to earthquakes and tropical cyclones. In the next 50 years Tonga has a 50 percent chance of experiencing a loss exceeding 175 million USD and casualties larger than 440 people, and a 10 percent chance of experiencing a loss exceeding 430 million USD and casualties exceeding 1700 people. To put these figures in perspective Cyclone Ian was estimated to have incurred about T\$38.5 million worth of damage and losses to the agriculture and fisheries sectors in the four directly affected districts of Ha'apai. Damages are estimated at T\$33 million and estimated losses at T\$5.4 million.

Annex 2: Level of achievement of 2006 climate change policy objectives and strategies and JNAP goals and objectives

Table A1: Alignment between the 2006 Tonga Climate Change Policy Objectives and Strategies and JNAP 2010-2015 Goals and Objectives; and extent to which these have been achieved

2006 Tonga Climate Change Policy: Policy Objectives and Strategies			JNAP 2010 to 2015 Goals and Objectives				
Objective	Strategies	Extent achieved		Goal	Objectives	Extent achieved	
			Fully achieved				Fully achieved
			Partially achieved				Partially achieved
			Not achieved				Not achieved
Objective 1 To amend the existing framework or to endorse the proposed climate change framework	1.1 Legislation to be formulated ruling that all specific climate change related issues concerning climate change mitigation, adaptation, and vulnerability assessment fall under the auspices of the Department of Environment.						
	1.2 The Department of Environment to amend, strengthen and fill in the gaps in legislation whereby mandate over the issue cannot be obtained.						
Objective 2 To mainstream climate change issues into all environmental, social and economic processes including enactment and amending existing legislations	2.1 Strengthen Government, Non-Government Organisations, and private sectors networking capacity in the implementation of climate change policy /initiatives.			Goal 1 Improved good governance for climate change adaptation and disaster risk management (mainstreaming, decision making, organizational and institutional policy frameworks)	Develop an enabling policy and capacity to strengthen planning and decision making processes with the incorporation of relevant climate change and disaster risk management considerations		

	<p>2.2 Establish a National climate change team from all relevant sectors and stakeholders to oversee and monitor progress.</p> <p>(a) Responsible for mainstreaming climate change issues into their respective ministries, departments and organisations.</p> <p>(b) Ensure that relevant acts and regulations are reviewed and responses strengthened across all relevant sectors.</p>			Strengthen institutional arrangements and capacity for climate change and disaster risk management in Vavau, Haapai, Eua and in the Niuaus	
	<p>2.3 Establish village committees composed of town officers with members from the community to work closely with the national climate change team. This will generate the necessary grassroots interest.</p>				
<p>Objective 3 To improve and strengthen the collection, storage, management, analysis and use of data (including Greenhouse gases, vulnerability & climate data) to monitor climate, sea level change and their effects.</p>	<p>3.1 To review existing data, data collection and development of an integrated approach for data aggregation and mechanisms for sharing with private and public sector agencies.</p>		<p>Goal 2 Enhanced technical knowledge base, information, education and understanding of climate change adaptation and effective disaster risk management</p>	<p>Improve science and technical knowledge base within key government agencies</p>	
	<p>3.2 To seek technical assistance from relevant regional and international agencies in carrying out research, collection, and bringing up to date of data.</p>			<p>Increase relevant education and community awareness programmes</p>	
	<p>3.3 To build both human and technical capacity for management and storage of climate related data.</p>			<p>Strengthen evidence-based decision and policy making through use of relevant and updated information</p>	

	3.4 Train and draw on local personnel whose local knowledge of the area will be of utmost value.				
	3.5 Establish national database to avoid duplication of information and for better security and access.				
Objective 4 To promote the raising of awareness and understanding of climate change, variability and sea level changes, mitigation, vulnerability and adaptation responses.	4.1 Increase technical capability to address and promote climate change issues.				
	4.2 Promote and host on a frequent basis climate change awareness programmes, trainings and workshops.				
	4.3 Develop effective communication mechanisms and strengthen partnerships through the establishment of village committees to raise awareness at the community				
Objective 5 To protect the populations, resources and assets, vulnerable areas at risk from climate change impacts.	5.1 Identify vulnerable areas and develop adaptation options that are cost effective and culturally sensitive to reduce vulnerabilities (foreshore construction, tree planting).		Goal 3 Analysis and assessments of vulnerability to climate change impacts and disaster risk	Implement appropriate coastal protection systems	
	5.2 Extensive consultation and cooperation amongst government ministries, local communities and all relevant stakeholders in prioritizing adaptation options that can be implemented to reduce vulnerability.			Improve fisheries and coral reef management in view of climate change	

	5.3 Encourage the participation of communities in the planning, management and implementation of adaptation measures within their communities.				Strengthen community-based capacity in vulnerability and analysis	
	5.4 Enforce and enact new regulations to support the building code and all other relevant provisions prohibiting sand removal, mangrove cutting, smoking vehicles and free ranging animals.				Strengthen the capacity for implementing and enforcement of impact assessments	
	5.5 Investigate alternative sites for possible relocation of settlements from low lying vulnerable areas.				Assess water resources and supply capacity in capitals, villages and outer islands	
					Assess impact of climate change on vector borne, water borne and nutritional related diseases	
			Goal 4 Enhanced community preparedness and resilience to impacts of all disasters		Increase resilience of school buildings and tourism sector to climate change impacts and disaster risks	
					Ensure food and water security after disaster events	
					Increase disaster preparedness, responses and recovery of community	
					Strengthen weather monitoring networks and forecasting centres	
					Strengthen early warning systems	
Objective 6 To mitigate the causes of human induced	6.1 To identify and measure levels of different sources of Greenhouse gas emissions in the Kingdom (Energy,		Goal 5 Technically reliable, economically affordable		10% reduction of GHG emissions based on 2000* levels by 2015 through implementing Renewable Energy (RE)	

climate change.	Agriculture, Waste, Forestry)		and environmentally sound energy to support the sustainable development of the Kingdom	and Energy Efficiency (EE) programmes	
	6.2 To formulate and implement programmes to reduce Greenhouse gas emissions (encourage tree planting, promote usage of renewable energy resources, cleaner vehicles, waste generation and combustion)			Improve energy security through improved planning and response mechanisms	
	6.3 Enact and enforce regulations to prohibit human activities that are detrimental to the environment (sand removal, deforestation, burning of solid waste, below par vehicles).				
			Goal 6 Strong partnerships, cooperation and collaboration within government agencies and with civil societies and NGOs	Engage civil societies, NGOs, and private sectors in implementation of this Plan	
				Strengthen partnerships within government agencies and with civil societies, Non-Government Organisations and Private Sectors	

Annex 3: Alignment of existing Legislation, Policies, and Plans

Table A2: Extent to which current Legislation, Policies and Plans are aligned with a Resilient Tonga

	Legislation	Policy	Plan
Sector/focal area		Fully aligned with a Resilient Tonga	
		Partially aligned with a Resilient Tonga	
		Not aligned with a Resilient Tonga	
		A priority for completion/development; and to be fully aligned with A Resilient Tonga	
		Needs to be reviewed	
Finance and Planning	TSDf		
	Public Financial Management Act		National Infrastructure and Investment Plan CFRGA
Climate Change	Climate Change Fund Bill Ozone Layer Protection Act	Climate Change Policy	Revised JNAP
Environment	Environment Management Act and EIA Act		Revised National Biodiversity Strategy and Action Plan
Energy	Renewable Energy Act	Renewable Energy Policy	Tonga Energy Roadmap
	Energy Bill		
Meteorology	National Emergency Management Act		
DRM	National Emergency Management Act		JNAP, National Emergency Management Plan
Internal Affairs	District & Town Officers Act Fono's Act		Community Development Plans and Island Strategic Development Plans
Infrastructure	National Spatial Management Act Building Control and Standards Act		Building Code Urban Infrastructure Development Plan
Lands and Natural Resources	Land Act	Land Use Policy	Land Use Plan
Women	Family Protection Act	National Policy on Gender and Development	Strategic Plan
Culture and Youth	Parks and Reserves Act Polynesian Heritage Trust Act	National Youth Policy	Tonga National Youth Strategy and Action Plan

	Preservation of Objects of Archeological Interests Act	National Cultural Policy	National Cultural Plan
Health	Public Health Act 2008 Health Services Act 1991 Health Promotion Act 2007		Tonga National Strategy to Prevent and Control Non Communicable Diseases
Agriculture		Agriculture Policy	Agriculture Sector Plan
Fisheries	Fisheries Management Act SMA Act		Fisheries Sector Plan
Forestry	Forests Bill 2015	Forestry Policy	Forestry Plan
Tourism	Tourism Act 1976		Tonga Roadmap
Water	Water Resources Bill	National Water Policy	Water Plan
Education	Education Act 2014	Education Policies	
Chamber of Commerce and Industries			Public Private Sector Plans