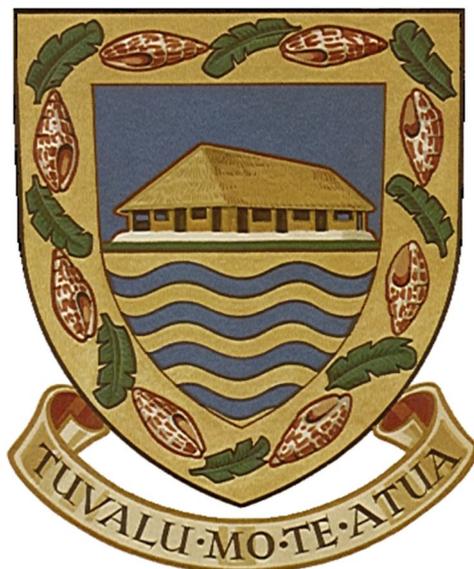

REPORT OF THE AUDITOR-GENERAL:



PERFORMANCE AUDIT ON COASTAL PROTECTION MANAGEMENT IN TUVALU



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Number:.....2014



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7 January 2014

Honourable Speaker of Parliament
Office of the Speaker of Parliament
Parliament of Tuvalu
Vaiaku

Dear Sir,

REPORT OF THE AUDITOR GENERAL: PERFORMANCE AUDIT REPORT ON COASTAL PROTECTION MANAGEMENT IN TUVALU

The Office of the Auditor General has undertaken an independent performance audit on Performance Audit on Coastal Protection Management In Tuvalu with the authority under Part 3 Section 25 of the Audit Act.

I present the report to you as required under section 45 of the Audit Act since the House of Parliament is not sitting. Nineteen (19) bound copies of the report are provided herewith for distribution to all Honourable Members of Parliament.

Appreciate proper arrangement for all purposes, taken to be a document published by order or under the authority of Parliament and proper scrutiny by the Public Accounts Committee.

Sincerely,

Eli Lopati
Acting Auditor- General for Tuvalu

Cc: All Honourable members of Parliament
Secretary to Government
Secretary for Natural Resources
Secretary for the Office of the Prime Minister

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1. List of Acronyms

ADB	-	Asian Development Bank
AWP	-	Annual Work Plan
AusAID	-	Australian Agency for International Development
CCA	-	Climate Change Adaptation
DoA	-	Department of Agriculture
DoE	-	Department of Environment
DoL	-	Department of Lands
IDI	-	INTOSAI Development Initiative
GEF	-	Global Environment Facility
GHG	-	Green-House Gasses
JICA	-	Japan International Cooperation Agency
Kaupule	-	Island Council
LDC	-	Least Developing Countries
LDCF	-	Least Developing Countries Fund
MDGs	-	Millennium Development Goals
MFATTEL	-	Ministry of Foreign Affairs, Trade, Tourism, Environment and Labour
MNR	-	Ministry of Natural Resources
NAPA	-	National Adaptation Program of Action
NCCS	-	National Climate Change Summit
NSSD	-	National Strategic for Sustainable Development
PAMs	-	Priority Adaptation Measures
SOPAC	-	South Pacific Applied Geosciences Commission
SPC	-	Secretariat of the Pacific Community
SPREP	-	South Pacific Regional Environmental Program
TCCP	-	Tuvalu Climate Change Policy
TDF	-	Tuvalu Development Fund
TNFD	-	Tuvalu National Fisheries Department
TNSAP	-	Tuvalu National Strategic Action Plan
UNDP	-	United Nation Development Program
UNFCCC	-	United Nation Framework Convention on Climate Change

2. Executive Summary

2.1 Introduction

Climate change

Our atmosphere is made up of greenhouse gases (GHG) such as carbon dioxide, methane and ozone, as well as water vapour. The atmosphere keeps heat from the sun in, keeps extra heat out, and lets heat out so that the earth is warm enough to sustain life.

Human activities, such as burning oil, coal and gas increase the amount of GHGs in the atmosphere. This has the effect of trapping more of the heat that would have escaped through the atmosphere, which makes the earth warmer. This warming is what is referred to as ‘global warming’ and is also known as ‘climate change’.

Tuvalu and the impact of climate change

Tuvalu is one of the smallest nations in the Pacific with an aggregated land mass of just 26 square kilometres and highest point of approximately 4 meters above sea level. Rising sea level is a major concern as scientific research reveals that Tuvalu’s sea level is rising at 5 mm per year for Tuvalu.

Sea level rise is likely to have a big impact on Tuvalu, including coastal erosion and flooding from storm surges. Floods are also likely to result in salt intrusion, which will affect agriculture and water quality.

Because of the impact of rising sea level accompanied by storm surge on Tuvalu, Tuvalu’s National Adaptation Program of Action (NAPA) identified Coastal Protection Management as the first priority issue for Tuvalu.

The audit

The audit was conducted on Climate Change Adaptation (CCA) focusing on Coastal Protection Management in Tuvalu. The objective of the audit was to assess the effectiveness, efficiency and economy of plans and projects to protect Tuvalu’s coast from sea level rise and storm surge by examining the following:

- 1) Is there an effective framework to manage coastal protection?
- 2) Have coastal protection projects and programs been implemented effectively, efficiently and economically?

The key agencies audited were the Department of Environment (DoE), which manages the National Adaptation Program of Action (NAPA), and the Tuvalu National Fisheries Department (TNFD).

2.2 Key Audit Findings

The key audit findings below focused on the 2 Lines of Enquiry as follows:

LOE 1: Is there an effective framework to manage coastal protection?

The Audit found that Tuvalu was signatory to the MDG and the UNFCCC, which provided an agenda for action on a number of issues including climate change and guidelines on developing a National Adaptation Plan of Action. Part VIII of the Environment Act requires

that relevant projects, policies and programs be developed to address the impact of climate change.

The Audit also found Te Kakeega II – National Strategies on Sustainable Development (NSSD) does not fully consider the problem of coastal erosion in Tuvalu and that there is no policy that specifically focuses on coastal protection management in Tuvalu.

The NAPA Annual Work Plans (AWP) for the years 2010, 2011, 2012 and 2013 included a number of planned activities that relate to coastal protection and coastal management, but only one of the NAPA activities have been implemented. For example, the development of a Coastal Zone Management Policy was one of the targeted activities in the NAPA work plans for 2010, 2012 and 2013, and although work on drafting the policy has commenced, it has not been completed.

LOE 2: Have coastal protection projects and programs been implemented effectively, efficiently and economically?

The Audit found that only some of the coastal protection projects had been completed. Most of the approved coastal protection projects under the NAPA 1/+ are still yet to commence and therefore effectiveness, efficiency and economy cannot be assessed due to their current status.

There had been a significant underutilisation of GEF allocated budget funds for Tuvalu’s climate change adaptation measures.

Program governance arrangements to support coastal protection programs and projects funded by the development partners, including sound management and project monitoring have not been developed.

Tuvalu relies heavily on SOPAC and other international research bodies to conduct research and studies of Tuvalu’s sea, coastal and land areas. This reliance increases the risk of projects being delayed if the visits to Tuvalu by SOPAC are deferred.

2.3 Recommendations

- 7.1 Clear targets and objectives on coastal protection strategies are included within the NSSD so that timing of adaptation measures and goals for coastal protection initiatives are identified and prioritised.
- 7.2 Develops the Coastal Zone Management Policy and has it endorsed, to ensure the full implementation of coastal protection strategies to protect Tuvalu’s coasts.
- 7.3 Include time limits in the TCCP to ensure thematic goals with related strategies are achieved at a targeted time/date.
- 7.4 Carry out a Cost Benefit Analysis to confirm the Program Priorities, or if the Cost Benefit Analysis has been completed, locate and review it.
- 7.5 Review project management procedures and practice to ensure target projects and programs are achieved on time and within budget
- 7.6 When drafted the Coastal Zone Management Policy should:
 - reflect the key risks that climate change poses for the Tuvalu coastline;
 - include key risks that are based on risk assessments and reliable studies and research;
 - support the Environment goals identified in the NSSD “Te Kakeega II” 2005 – 2015; and
 - align with Environment Protection Act and also regional and international frameworks that Tuvalu is signatory to.

- 7.7 Establish a Coastal Zone Management committee to oversee performance and challenges faced in the development of the coastal zone management policy. This could be as part of a general committee to oversee all policies related to environmental issues, not only NAPA related priorities.
- 7.8 Include timelines, budget details and progress monitoring arrangements in the TNSAP for the successful implementation of planned activities.
- 7.9 Ensure proper maintenance of salt tolerant plants and trees planted along coastal areas.
- 7.10 Develop a system for the monitoring, reviewing and reporting on the progress of the NAPA AWP targeted activities to ensure targeted activities set out within their AWP are achieved.
- 7.11 Perform an assessment of the achievability of the planned activities to ensure that the AWPs are realistically able to be complied with in the future.
- 8.1 Proper consultation between project team and the Government occurs before commencing a new project, to ensure that the project's goals are satisfactory to the Government.
- 8.2 Ensure existence of a signed agreement between the project team, island leaders and the Government on any project they wish to carry out.
- 8.3 Correct filing of project documents for ease of future referencing.
- 8.4 Consider seeking opportunities for the DoE staff to enhance its own research and scientific study capability on the vulnerability of Tuvalu's coast to the impacts of climate change.
- 8.5 Develop an awareness program to inform the public routinely of the purpose and benefits of the Green Technology project to prevent damage and loss of plants. Additionally impose penalties and fines to penalise members of the public who are damaging property.
- 8.6 Improves the project recordkeeping within the DoE to assist with the management of its projects.
- 8.7 Improves its project management in the DoE so that funds allocated to Tuvalu from development partner agencies for climate change mitigation programs and projects are being utilized in accordance with milestones in the project plan.
- 8.8 Ensure regular monitoring of JICA projects and programs is conducted to keep in track of performance and to address under performance.
- 8.9 Take immediate action to formalize a monitoring framework to set out clear monitoring activities.
- 8.10 Take immediate action to appoint an independent evaluating officer.
- 8.11 Appoint an officer independent of the preparation of the work plan and activities to approve the activities and work plan. It is considered good practice to involve the development partners in the work plan approval process.

2.4 Overall Conclusion

Rising sea levels from the impact of climate change means that coastal protection is an important issue for Tuvalu.

There is relevant legislation that addresses environmental issues, however, there is a lack of alignment between legislation, policies and plans. This potentially jeopardises current and future coastal erosion management measures.

Some of the coastal protection projects had been completed and that there has been a significant underutilisation of budget funds.

Program governance arrangements, including sound management and project monitoring need to be developed. This is in order to support coastal protection programs and projects funded by development partners.

3. Introduction

3.1 Background

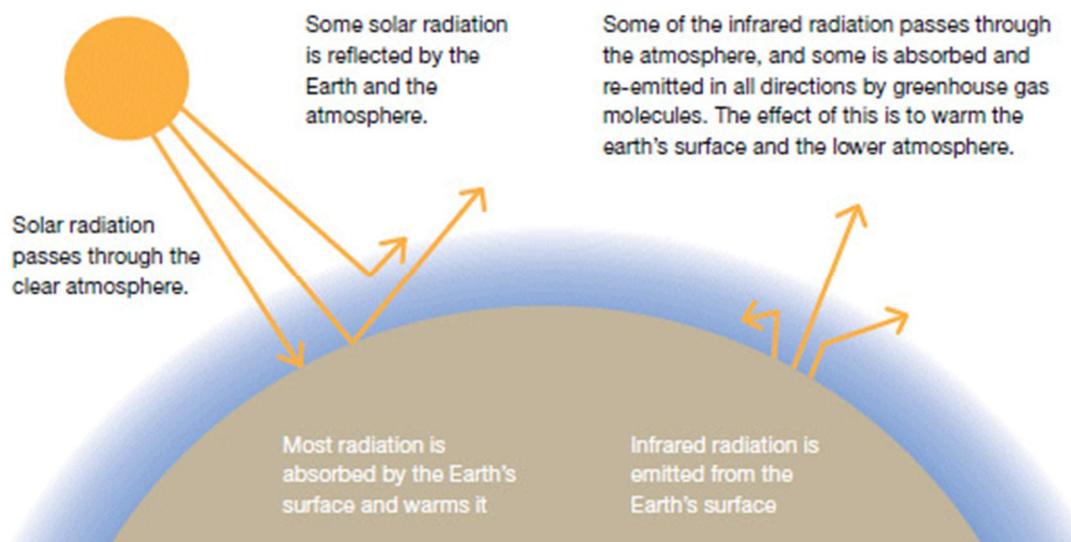
Climate change

Our atmosphere is made up of greenhouse gases (GHG) such as carbon dioxide, methane and ozone, as well as water vapour. Our atmosphere keeps heat from the sun in so that the earth is warm enough to sustain life.

Human activities, such as burning oil, coal and gas increase the amount of GHGs in the atmosphere. This has the effect of trapping more of the heat that would have escaped through the atmosphere, which makes the earth warmer. To make way for agriculture, the clearing of trees which absorb a large amount of carbon dioxide also contributes to a warming earth.

This warming is what is referred to as ‘global warming’ and is also known as ‘climate change’. Figure 3.1 shows how this process works.

Figure 3.1: *The Greenhouse effect*



Source: <http://www.climatechange.vic.gov.au/what-is-climate-change/understanding-the-science>

Climate change impacts

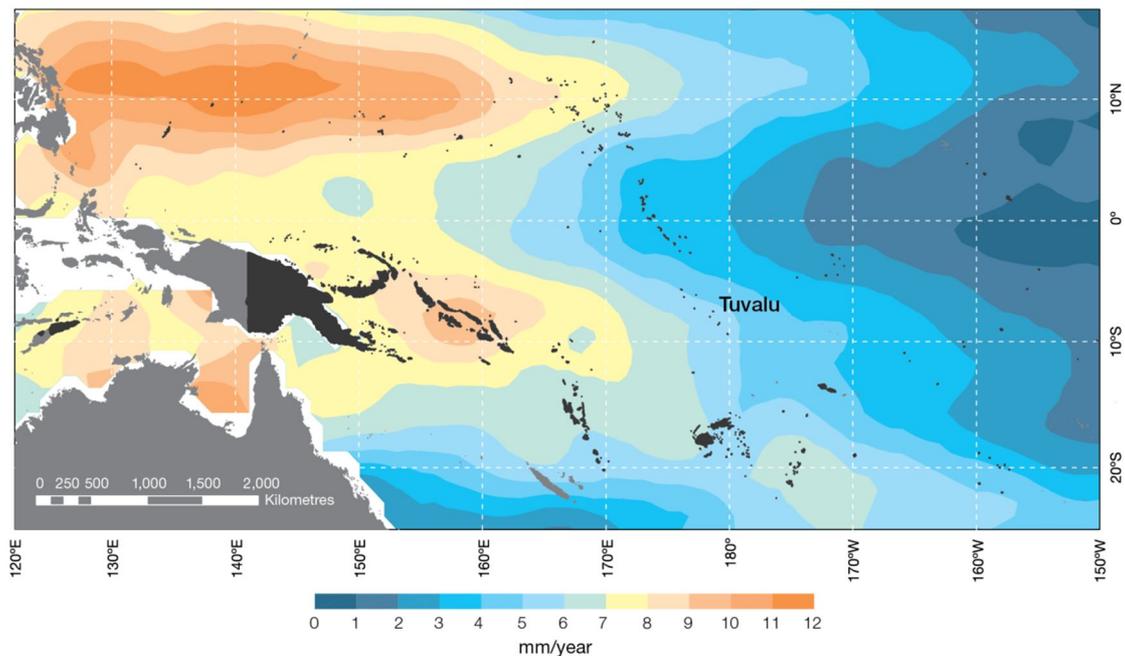
Concentrations of GHGs in the atmosphere are higher than at any time in the last 420,000 years, with global warming accelerating over the past 50 years. Mean temperatures have increased by 0.2–0.6 degrees Celsius over the past 150 years, contributing to increases in sea level.

Tuvalu is one of the most vulnerable countries to be affected by climate change and rising sea level. It is one of the smallest countries in the world with an aggregate land mass of 26 square kilometres, consisting of 9 coral reef atoll islands with a highest point approximately 4 metres above sea level. On its main island (Funafuti) the narrowest point is approximately 50 metres wide.

Sea level rises are likely to have big impacts on Tuvalu. These impacts include coastal erosion and flooding from storm surges. Floods are likely to result in salt intrusion, which affects agriculture and water quality.

Figure 3.2 shows the rate of sea level rise measured by satellite altimeters from January 1993 to December 2010. It shows that over this time, the sea level rise around Tuvalu has been approximately 5mm each year, compared with between 2.8–3.6mm each year globally. Given Tuvalu is only 4 metres above sea level at its highest point, this sea level rise is a big issue.

Figure 3.2: *Rate of sea-level rise measured by satellite altimeters from Jan 1993 to Dec 2010.*
Regional Distribution of the Rate of Sea-Level Rise



Source: Tuvalu Meteorological data. (Ms Hilia’s presentation on Climate Change)

The nine islands of Tuvalu are made from coral. It is generally accepted that climate change will lead to coral bleaching which will have a significant impact on Tuvalu because if the coral does not grow, the islands will not grow. This will make Tuvalu more vulnerable to sea level rise. Other predicted social and economic problems for Tuvalu, caused by climate change, include:

- inconsistent fish catches for local fishermen, affecting food security and revenue from sales of fish;
- increased droughts intensity;
- less frequent but more intense tropical cyclones; and
- increased health issues from the impact of the above.¹

Sea level rise as a result of climate change, also increases the damage of waves during storms and erosion of Tuvalu’s precious lands (see figure 7.2.2 below). Coastal erosion as a result of climate change is a hindrance and a problem for the people of Tuvalu, including land owners.

¹ European Union Global Climate Change Alliance Project workshop findings from presentations from project experts and staff, and also from views of participants and fishermen from each island.

Figure 3.3 Dying trees in the process of collapsing due to coastal erosion occurring in the area.



The severity of coastal erosion may also depend on the strength of coastal current and sediment at the sea/land interface at an area². Consequently, the narrowing of channels between the islands due to erosion may further increase coastal currents and coastal erosion.

Climate mitigation and adaptation

Responding to the impacts of climate change usually happens in two ways— by preventing (mitigating) things from getting worse or by adapting to the things that have already changed or may change in the future.

Mitigation

Climate change mitigation involves making changes to the way we do things so that any future impacts from climate change are minimised. Mitigation actions include such things as using more renewable energy, using less fossil fuels and planting trees to capture more carbon dioxide.

Given the small contribution that small Pacific Island countries like Tuvalu make to the increase in GHGs, mitigation strategies within these countries are unlikely to have much of an impact in reducing the impacts of climate change.

Adaptation

As the climate has changed and is continuing to change, Tuvalu’s focus has been on adapting to the effects this change. Adaptation strategies and projects within Tuvalu include increasing the resilience of coastal areas to climate change, improving water security and improving food security.

The Government funds and manages some of these projects, while others are funded and managed directly through development partner aid programs. The following is a summary of the priorities surrounding adaptation to climate change in Tuvalu:

- The National Adaptation Plan of Action (NAPA) is the Government’s plan on how Tuvalu will adapt to the effects of climate change. The NAPA identifies urgent and immediate adaptation priority needs of Tuvalu.
- The Least Developed Countries Fund, through the Global Environment Facility (GEF), and Australian Agency for International Development (AusAID) identifies

² National Adaptation Program of Action – Project Profile 1- pg 41

building resilience of coastal areas and building resilience of communities as priorities for funding.

- Coastal protection is considered a priority by the Department of Environment and the Tuvalu National Fisheries Department. These coastal protection programs are funded by the Japanese International Cooperation Agency (JICA).

The funding arrangements for coastal programs are covered in more detail later in the report.

3.2 Audit Focus - Coastal protection

The audit focussed on the management of coastal protection for the following reasons;

- As sea level rise is an outcome of climate change, the people of Tuvalu recognised the need for a strong coastline that stands as a protective barrier to minimise the impacts of sea level rise on their atolls.
- At the National Climate Change Summit held on Funafuti in 2011, most island leaders and other participants agreed that Coastal Protection should be Tuvalu's first priority in order to minimise the impact of sea-level rise.

3.3 Why we performed the audit and our audit mandate

The Office of the Auditor-General undertook this audit for three reasons:

- The high public interest in the effects of climate change and the impact of rising sea levels on living conditions in Tuvalu,
- The Pacific Association of Supreme Audit Institutions (PASAI) provision of assistance with audit planning, conduct and reporting as part of the cooperative performance audit program of the Pacific Regional Audit Initiative³.
- The opportunity for the Tuvalu Audit Office to engage in its fourth performance audit and to build capacity within the performance audit division.

The Audit Office's mandate under the Audit Act permits the Auditor General to conduct an audit of all or any particular activities of a public sector entity that may be considered appropriate and to report findings accordingly to Parliament.⁴

3.4 Entities audited and their responsibilities

In conducting this audit, we examined the two entities which play a major role in Coastal Protection Strategies in the prevention of Tuvalu's coast from sea level rise and storm surges:

1. the Department of Environment (DoE) a division in the Ministry of Foreign Affairs, Trade, Tourism, Environment and Labour (MFATTEL)
2. Tuvalu National Fisheries Department (TNFD), a division under the Ministry of Natural Resources (MNR).

⁴Audit Act 2008 part 3 section 25(1) *The Auditor-General may, when the Auditor-General considers it appropriate to do so, conduct an audit of all or any particular activities of a public sector entity to determine whether the entity is carrying out those activities effectively and doing so economically and efficiently and in compliance with the relevant laws and other prescribed requirements. (2) The audit may be conducted as a separate audit or as part of another audit.*

The Department of Environment (DoE)

The DoE plays an important part in the Coastal Protections Strategies as it is the governing agency for any environment related activities in Tuvalu. The DoE also maintains direct contact with regional and international organisations involved in environment related projects and programs.

The DoE is mandated under the Environment Protection Act to provide protection and management of the environment in Tuvalu and has a related purpose to ensure long term conservation and sustainable use of living resources for the benefit of the people of Tuvalu.

Under the United Nations Framework Convention on Climate Change (UNFCCC), the Global Environment Fund (GEF) offers assistance to Least Developed Countries (LDCs) to prepare and implement a NAPA. NAPAs provide a process for countries to identify priority activities that respond to their urgent and immediate needs to adapt to climate change – those for which further delay would increase vulnerability and/or costs at a later stage. The DoE is responsible for the National Adaptation Program of Action (NAPA) in Tuvalu.

The DoE established a Project Management Unit (PMU) to specifically coordinate the NAPA. The PMU is managed by four staff, which consist of a Project Coordinator, a Works Supervisor, a Project Administrative Assistant and a National Technical Adviser. The PMU have also established Community Organiser positions to support implementation of projects. The Community Organisers are stationed on each islands of Tuvalu.

The Tuvalu National Fishery Department (TNFD)

The Tuvalu National Fishery Department (TNFD) under the MNR is responsible for national fisheries in Tuvalu. It is mandated under the *Marine Resource Act*, with the aim of ensuring long term conservation and sustainable use of living marine for the benefit of the people of Tuvalu. The TNFD was included in the audit because it is a counterpart agency of the Forum Sand project, a coastal protection project in Funafuti.

The Tuvalu Audit Office also consulted:

- the **Department of Lands (DoL)** which under the MNR encourages the optimum usage of land by providing the necessary framework to improve the socio-economic benefit and sustainable development.
- the **Attorney-General's Department** to seek advice on the policy development process in Tuvalu.

4. Funding Arrangements

Coastal Protection projects are funded by the Government and three development partners; GEF, Australian Aid (AusAID), and JICA. More detail about the specific funding arrangements can be found later in the report.

Global Environment Facility (GEF)

The GEF was established in October 1991 as an USD\$1 billion pilot program by the World Bank to:

- assist in the protection of the global environment and to promote environmental sustainable development; and

- provide new and additional grants and concessional funding to cover the "incremental" or additional costs associated with transforming a project with national benefits into one with global environmental benefits.

The United Nations Development Programme (UNDP), the United Nations Environment Program (UNEP), and the World Bank were the three initial partners implementing GEF projects.

Currently, the GEF is regarded as the largest public funder of projects to improve the global environment. For Tuvalu, GEF provides grants for projects related to biodiversity, climate change, land degradation and persistent organic pollutants.

Japan International Cooperation Agency (JICA)

JICA is an independent Governmental agency that coordinates official development assistance from the Government of Japan. Its charter is to assist economic and social growth in developing countries, and to promote international cooperation.

JICA also provides training opportunities for participants from developing countries in a wide range of fields, which include medical, industrial and agricultural. For Tuvalu, the JICA has assisted in funding the Foram Sand project and Gravel Beach Nourishment project, both of which focus on coastal protection.

Australian Agency for International Development (AusAID)

AusAID is the Australian Government agency responsible for managing Australia's overseas aid program. The objective of the aid program is to assist developing countries to reduce poverty and achieve sustainable development, in line with Australia's national interest.

Through AusAID, in 2011, the Australian Government has assisted GEF by providing extra funding to build up existing activities of the NAPA 1 and also the inclusion of a gender component. As a result of the additional funding from AusAID, the NAPA 1 changed its project title to NAPA 1/+.

5. Audit Objective and Scope

The objective of the audit was to assess the effectiveness, efficiency and economy of policies, plans and projects to protect Tuvalu's coast from sea level rise and storm surge by examining two lines of enquiry (LOE):

1. Is there an effective framework to manage coastal protection (LOE 1)
2. Have coastal protection projects and programs been implemented effectively, efficiently and economically? (LOE 2)

The two LOE are further broken down into audit criteria as follows:

LOE 1

- Legislation and Policies have been developed that-focus on protecting coastal areas from climate change.
- Policies identify the key risks (evidence based) of coastal erosion and identify actions to address the risks.
- Policies and actions are supported by an effective implementation plan that outlines resources, timing and monitors progress of the project.

LOE2

- Projects and Programs shall be identified, timed, budgeted and planned with the goal of protecting the Tuvalu coast from sea level rise and storm surge.
- Project funds are used for their intended purposes.
- Project monitoring is in place to monitor performance and to address under performance.
- Project delivery is coordinated and roles, responsibility and accountability of the projects are clear.

The scope of the audit was on the management by the two responsible departments, (DoE and TNFD) of coastal protection plans and projects. It also examines the implementation of projects funded through GEF, AusAID and JICA.

6. Audit Methodology

This section of the report outlines the methodologies used by the audit team to collect relevant information for the audit. It involves reviewing legislation, conventions and agreements, and interviewing key personnel.

6.1 Legal Framework (policies / regulation) reviewed

Table 6.1.1: *Legislation reviewed*

Legislation	Source
Environment Protection Act	Laws of Tuvalu
Financial Instructions	Laws of Tuvalu
Public Finance Act	Laws of Tuvalu

Table 6.1.2: *Convention and Agreements obtained and reviewed*

Convention to:	Signed by Government on:
United Nation Framework Convention on Climate Change (UNFCCC)	8 th June 1992
United Nation Convention to Combat Desertification (UNCCD)	14 th September 1998
Conventional on Biological Diversity (CBD)	8 th June 1992

6.2 Interviews

The Audit team also conducted interviews with key personnel of selected key agencies. The key personal, their roles and responsibilities and the department they work for are detailed below.

Table 6.2.1: *Officers interviewed during the audit.*

Officer and their position	Department and Ministry
Acting Director of the Department of Environment – Mrs Pepetua Latasi	Ministry of Foreign Affairs, Tourism, Trade, Environment and Labour.

NAPA Coordinator – Mr Solofa Uota	Ministry of Foreign Affairs, Tourism, Trade, Environment and Labour.
NAPA Project Assistant – Ms Petesa Finikaso	Ministry of Foreign Affairs, Tourism, Trade, Environment and Labour.
Disaster Management Coordinator – Mr Sumeo Silu	Office of the Prime Minister
Senior Crown Council – Saaga Talu	Attorney General’s Office, Office of the Prime Minister.

7 LOE 1: Is there an effective framework to manage coastal protection?

This section in the report focuses on the first line of enquiry (audit objective) and examines the legislative and policy framework for managing coastal protection. It covers the relevant international agreements that Tuvalu is signatory to, and the relevant legislation and policies in place within Tuvalu that focus on protecting coastal areas from climate change. It also examines whether the policies identify the key risks of coastal erosion, take action to address these risks, and whether the policies and actions are supported by effective implementation plans that outline resources, timing and monitoring of the progress of the project.

7.1 General

The Audit considered that a strong legislative and policy framework, which was consistent with international framework agreements and Government commitments, would need to be in place for Tuvalu to respond to the impacts of climate change and manage coastal protection effectively. Specifically:

- A legislative framework would demonstrate the importance Parliament of Tuvalu places on the climate change and ensure that action is taken.
- A policy framework would include policies to implement legislation, and to guide strategies and plans to perform actions.

INTERNATIONAL AGREEMENTS

The Government is signatory to the following relevant international climate change agreements.

Millennium Development Goals

In September 2000, at the UN Millennium Summit, the international community agreed to 8 Millennium Development Goals (MDGs) to be met by 2015⁵. The 8 MDGs are as follows:

1. Eradicating extreme poverty and hunger
2. Achieving universal primary education
3. Promoting gender equality and empowering women
4. Reducing child mortality rates
5. Improving maternal health
6. Combating HIV/AIDS, malaria, and other diseases
7. Ensuring environmental sustainability, and

⁵ National Strategy for Sustainable Development (NSSD) – Te Kakeega II 2005 - 2015

8. Developing a global partnership for development.

MDGs 1 through 7 are the agenda for action by developing countries, whereas goal 8 sets down the responsibilities of developed countries to achieve the MDGs. Goal 7, Ensuring environmental sustainability is relevant to the audit.

The National Strategy for Sustainable Development ‘Te Kakeega II’ was established by considering the 8 MDGs as well as outcomes of a National Summit on Sustainable Development involving Island leaders, held in Funafuti from 28 June to 9 July 2004.

UNFCCC, SPC and SPREP

Tuvalu was among the first countries to sign the United Nation Framework Convention on Climate Change (UNFCCC). The Government signed the UNFCCC on 8th of June 1992⁶ with an aim to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human caused interference with the climate system.

Under Article 4 of the UNFCCC, all Parties made general commitments to address climate change. Some examples of the commitments include climate change mitigation and adapting to the impacts of climate change

Tuvalu is also a member of the Secretariat of the Pacific Community (SPC) and the South Pacific Regional Environmental Programme (SPREP).

The Climate Change Council and Focus Group

The Climate Change Council and Focus Group is planned to be established later in 2014. The audit has not focussed on this council and focus group as it is yet to be fully established at the time of tabling of this report.

7.2 Legislation and Policies have been developed that–focus on protecting coastal areas from climate change.

The DoE within the MFATTEL portfolio carried out research and assessment on ways to mitigate risk associated with coastal erosion. With the assistance of the public through community consultation, the Government endorsed and approved legislation, policies and plans that highlight and ensure coastal protection management strategies are in place.

RELEVANT LEGISLATION IN PLACE

The *Environment Protection Act* is implemented by the DoE and is the leading legislation that governs any environmental related activities. Its mission is to: *Ensure environment sustainability in all sectors in Tuvalu by providing informed direction in line with global best practice.* The general objectives of the Act include:

- a) to coordinate the role of Government in relation to environmental protection and sustainable development;
- b) to provide a mechanism for the development of environmental policy and law;
- c) to promote a clean and healthy environment for all Tuvaluans;
- d) to prevent, control, monitor and respond to pollution;

⁶ National Adaptation Program of Action 2007 – Pg 5

- e) to promote public awareness and involvement in environmental issues and the preservation of Iloga (the identity and customs of the Tuvaluan people) as it relates to the environment;
- f) to facilitate compliance and implementation of obligations under any regional and international environmental or natural resource agreements or conventions to which the Government has ratified or acceded to;
- g) to facilitate sustainable development with respect to the management of the environment and natural resources;
- h) to facilitate the assessment and regulation of environmental impacts of certain activities;
- i) to promote the conservation and, where appropriate, sustainable use of biological diversity and the protection and conservation of natural resources, on the land, in air and in the sea; and
- j) to reduce the production of wastes, and to promote the environmentally sound management and disposal of all wastes.

Part VIII of the Environment Protection Act addresses the impacts of climate change by requiring that relevant policies, projects and programs are in place to mitigate the impacts of climate change. Section 29 deals with this specifically.

29 Policies and programmes to address climate change

- (1) *In conjunction with other Departments, each Kaupule, and relevant international agencies, and through the involvement of the community, the Department shall formulate, apply and implement strategies and programs to–*
 - (a) *raise the level of understanding throughout the world about the implications of climate change, and activities which contribute to climate change, on Tuvalu and the future of its people;*
 - (b) *promote understanding amongst the people of Tuvalu about the causes and implications of climate change;*
 - (c) *address the effects of climate change within Tuvalu on its water resources, coastal areas, lands and land usage, food security, biodiversity, fisheries economic welfare, public infrastructure and its vulnerability to natural disasters;*
 - (d) *implement programs and facilitate projects to protect its water resources, coastal areas, mangroves, lands, biodiversity, fisheries and public infrastructure, and to contribute to the health well-being and livelihoods of Tuvaluans; and*
 - (e) *participate in international conventions and forums with a view to obtaining the fullest possible assistance to address the implications of climate change and undertake adaptation initiatives.*
- (2) *Regulations made under this Act may provide for any matter associated with the response in Tuvalu to climate change, and to implement strategies and programs formulated in accordance with subsection (1), and may –*
 - (a) *provide for the protection and conservation of Tuvalu’s fresh water resources;*
 - (b) *provide for matters concerning drought prevention and response; and*
- (c) *provide for the protection, improvement and expansion of relevant public infrastructure.*

RELEVANT POLICIES

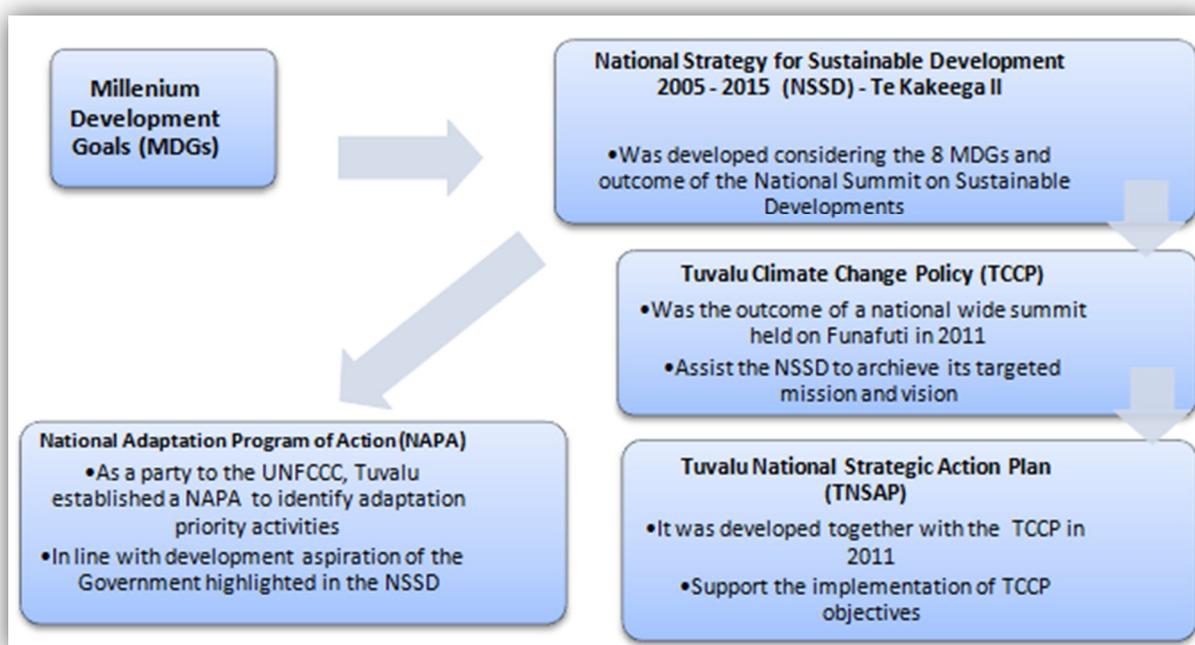
In line with the requirements of the *Environment Protection Act*, the DoE developed a national strategy for sustainable development and a national climate change policy that address the management of Coastal Protection. These policies are listed in table 7.1.1 below.

Table 7.2.1: *Relevant Policies*

Relevant Policies	Implementing Agency	Link Towards Coastal Management and Climate Change.
National Strategy for Sustainable Development 2005-2015 (NSSD) – Te Kakeega II.	All Government Ministries	Sets Medium to Long – Term Missions, Goals & Key Strategic Development Sector of the Government to adapt to challenges of climate change.
Tuvalu Climate Change Policy (TCCP) – ‘Te Kaniva’ 2012	Environment Department	Assists the NSSD by identifying thematic goals, policy strategic areas and outcomes.

The figure below shows the relationship of the Policies and Plans to the Millennium Development Goals and the NSSD. The above listed documents (in Table 7.1.1) are summarised below. Relevant implementation plans will be discussed under 7.1.3.

Figure 7.2.1: *Relationship between Policies and Plans with MDG and NSSD*



National Strategy for Sustainable Development ‘Te Kakeega II’

The National Strategy for Sustainable Development ‘Te Kakeega II’ is the principle policy document covering climate change issues. The document was prepared by considering the 8 MDGs as well as outcomes of a National Summit on Sustainable Development involving Island leaders, held in Funafuti from 28 June to 9 July 2004.

Audit Findings

From reviewing the NSSD, the Audit found that there are three key priorities and strategies under Environment goals 2005 - 2015 which are considered to be related to coastal protection. These are:

- stop unregulated development and degradation of the environment;
- establish National Climate Change Adaptation and mitigation policies; and
- minimise climate change impacts.

Of the above three strategies, the Audit found that none relate directly to coastal protection management. There are also no key targets or objectives under the NSSD that specifically address coastal protection management.

The Audit's view is that NSSD does not adequately consider the problem of coastal erosion in Tuvalu. As such, there is a risk that there will be less support provided by the Government for coastal protection strategies, and coastal protection becomes a lower priority than other projects.

Tuvalu has a broad framework for climate change including the Environment Protection Act, a national climate change policy and a supporting action plan. However, none adequately deal with coastal erosion or protection, for which Tuvalu is highly susceptible.

Recommendation:

- 7.1 Clear targets and objectives on coastal protection strategies are included within the NSSD so that timing of adaptation measures and goals for coastal protection initiatives are identified and prioritised.

Management Comments:

The Government have put in place a Climate Change policy, Energy Policy and a National Adaptation Program of Action (NAPA I+ and NAPA II).

Tuvalu Climate Change Policy (TCCP) 2012 - 'TE KANIVA'

The Tuvalu Climate Change Policy (TCCP) 'Te Kaniva' was the outcome of a nationwide consultation that took place in 2011. Consultation participants included all levels of the society in the outer islands and also island communities on the capital island Funafuti.

Following this consultation there was the one-day National Climate Change Summit (NCCS) on Funafuti in which participants finalised the outcomes of the consultation. The resulting NCCS communiqué, delivered after the consultation, forms the basis of the TCCP. The TCCP is considered crucial to achieving the environmental vision and mission of the NSSD.

The TCCP consists of 7 thematic goals that reflect prevention and adaptation measures on the impacts of climate change to the environment, taking also into account outcomes of the NCCS. These goals are to:

1. Strengthen adaptation actions to address current and future vulnerabilities;
2. Improve understanding and application of climate change data, information and site specific impacts assessment to inform adaptation and disaster risk reduction programmes;
3. Enhance Tuvalu's governance arrangements and capacity to access and manage climate change and disaster risk management finances;

4. Develop and maintain Tuvalu’s infrastructures to withstand climate change impacts, climate variability, disaster risks and climate change projection;
5. Ensure energy security and low carbon future for Tuvalu;
6. Plan for effective disaster preparedness, response and recovery; and
7. Guarantee the security of the people of Tuvalu from the impacts of climate change and the maintenance of national sovereignty.

Audit Findings

From reviewing the TCCP, the Audit confirms that coastal protection strategies are reflected under key strategies identified for TCCP goal 1 and goal 4. The table below sets out coastal protection related strategies along with the expected outcome within the TCCP.

Table 7.2.2: TCCP Coastal Protection Strategies and Expected Outcomes

GOALS	Coastal Protection related Strategies	Expected Outcomes
1.	Strengthen adaptation actions to address current and Future vulnerabilities.	
	Assessment and analysis of salt and heat tolerant food crops and tree species for coastal protection.	– Coastal protection through re-planting programmes and other appropriate schemes
	Legislation and policies to govern sustainable resource management, (marine, coastal and land) in the context of climate change impacts.	– Improve coordination driven by relevant policies
4.	Develop and Maintain Tuvalu’s infrastructure to withstand climate change impacts, climate variability, disaster risk and climate change project.	
	Physical planning and development control for Funafuti and the outer Islands.	Implementing agency that implements, monitor and evaluates actions highlighted in the Tuvalu National Strategic Action Plan.

(Source: Tuvalu Climate Change Policy)

The NSSD (Te Kakeega II) was established in 2005, and the TCCP was endorsed in 2011. The fact that it took 6 years for the development of the TCCP after the development of the NSSD represented missed opportunities to address effects of climate change recognising that the NSSD is only a 10 year strategy.

The acting director of the DoE advised the Audit that there is no policy that specifically focuses on coastal protection management in Tuvalu. The acting director of DoE further stated that there has been an effort made by the NAPA 1/+ project to draw up a Coastal Zone Management Policy and was targeted to be completed and endorsed by the Minister of the MFATTEL by June 2014.

As there is no coastal protection policy currently in place, the DoE is at present using the Environment Protection Act, the TCCP, NSSD and the Tuvalu National Strategic Action Plan as a guide for any coastal protection project and programs approved.

Recommendation:

- 7.2 The DoE in consultation with NAPA staff develops the Coastal Zone Management Policy and has it endorsed, to ensure the full implementation of coastal protection strategies to protect Tuvalu’s coasts.
- 7.3 The DoE include time limits in the TCCP to ensure thematic goals with related strategies are achieved at a targeted time/date.

Management Comments:

A four week period was given for management to provide comments and Audit followed up management with phone calls and emails. No comments have been provided by management for this section.

National Adaptation Program of Action (NAPA1/+)

Tuvalu was amongst the first countries to ratify the UNFCCC at the Rio de Janeiro summit in 1992. Under the convention, Least Developing Countries (LDCs) are offered assistance to prepare and implement a National Adaptation Program of Action (NAPA).

Focus of NAPAs

The NAPAs focus on urgent and immediate needs – those for which further delay could increase vulnerability or lead to increased costs at a later stage. NAPAs should use existing information; no new research is needed. They must be action-oriented and country-driven and be flexible and based on national circumstances. Finally, in order to effectively address urgent and immediate adaptation needs, NAPA documents should be presented in a simple format, easily understood both by policy-level decision-makers and by the public.

The NAPA process

The steps for the preparation of the NAPAs include:

1. combination of available information,
2. participatory assessment of exposure to current climate variability and extreme events and of areas where risks would increase due to climate change,
3. identification of key adaptation measures as well as criteria for prioritising activities, and
4. selection of a prioritised short list of activities.

The development of a NAPA also includes short profiles of projects and/or activities intended to address urgent and immediate adaptation needs of LDC Parties.

A LDCs Expert Group was established under the UNFCCC to assist LDCs in compiling their respective NAPA documents by formulating guidelines on how to develop a NAPA document.

In May 2007, the MNR endorsed the Tuvalu NAPA document⁷ with a primary aim of focussing initially on the adaptation needs in the agriculture, water, fisheries, land disaster, and human health sectors. The NAPA preparation was in line with the development aspirations of the Government stipulated in the NSSD.

⁷ In 2007 the DoE was under the Ministry of Natural Resources (MNR) until 2010 when it was shifted to MFATTEL

The NAPA Guideline emphasised that community participation should also be considered as it is the community who are most affected by the impacts of climate change and who will benefit once climate change impacts have been addressed.

During the NAPA stakeholders' consultation held in Funafuti, stakeholders including island leaders pointed out that coastal erosion is a major problem⁸, and was listed as the first priority of the NAPA. The table below shows the 7 priority areas identified by stakeholders in order of priority.

Table 7.2.3: *The list of NAPA Priorities Adaptation Measures (PAM) in order of priority indicated by project number, project title, implementing agencies and project cost. (NAPA 2007)*

Project No	Project Title	Executing Agency	Project Total Cost (USD)
1	Coastal: <i>Increasing resilience of Coastal Areas and Settlement to Climate Change</i>	•Primary Executing Agencies: Dept. of Lands, Public Works Department (PWD) and Kaupule •Secondary Executing Agencies: DoE	1,906,500
2	Agricultural: <i>Increasing subsistence pit grown pulaka productivity through introduction of salt tolerant pulaka species</i>	•Primary Executing Agencies: Dept of Agriculture and Kaupule. •Secondary Executing Agencies: DoE, Dept. of Lands and NGOs	2,220,000
3	Water: <i>Adaptation to frequent water shortages through increasing household water capacity, water collection accessories, and water conservation techniques.</i>	•Primary Executing Agencies: PWD and Kaupule •Secondary Executing Agencies: DoE and NGOs	2,675,300
4	Health: <i>Protecting Community health through control of vector borne/climate sensitive diseases and promotion community access to quality potable water</i>	•Primary Executing Agencies: Dept. of Health (DOH), PWD and Kaupule •Secondary Executing Agencies: DoE and NGOs	381,500
5	Fisheries: <i>Strengthening of Community Based Conservation Programmes on Highly Vulnerable near-shore Marine Ecosystems</i>	•Primary Executing Agencies: TNFD, DoE and Kaupule •Secondary Executing Agencies: NGOs and CBOs	636,500
6	Disaster: <i>Strengthening Community Disaster Preparedness and Response Potential</i>	•Primary Executing Agencies: Disaster Management Office (DMO), Metrological, DoE and Kaupule Secondary Executing Agencies: NGOs and CBOs	462,000
7	Fisheries: <i>Adaptation to Near-Shore Coastal Shellfish Fisheries Resources and Coral Reef Ecosystem Productivity</i>	•Primary Executing Agencies: TNFD, DoE and Kaupule •Secondary Executing Agencies: NGOs and CBOs	388,000
Total			8,669,800

The above listed Priority Adaptation Measures (PAMs) have all been identified and budgeted for by the NAPA.

⁸ Tuvalu's National Adaptation Program of Action 2007 – Pg 6

The NAPA coordinator advised that the 7 PAMs were divided into two phases in 2010 given the lack of progress made since beginning of the NAPA project.

- NAPA phase 1 (NAPA 1/+) was developed to concentrate on the first 4 PAMs which are Coastal, Agriculture, Water and Health.
- NAPA phase 2 (NAPA 2) which will focus mainly on the last 3 PAMs which are about Fisheries and Natural Disaster.

The NAPA project “*increasing Resilience of Coastal Areas and Community Settlements to Climate Change in Tuvalu*”, is being implemented by the DoE with support from GEF through UNDP for a period of 4 years beginning in November 2009 until November 2013.

The project has a total budget of USD 4,369,000 of which USD 3,300,000 is provided by the GEF administered LDCF and USD 1,069,000 donated by AusAID.

The acting director for DoE confirmed that there are a lot of activities to be done to achieve certain targets under the 7 PAMs. However, even with NAPA 1/+ there is limited time available.

The DoE also advised that there is an arrangement being sent to development partners and the UNFCCC for the beginning of the NAPA 2 projects, but it has not been confirmed yet.

Audit Findings

The Audit found that there had been significant delays in implementing the NAPA1/+ project, as it was started in 2010 and not in November 2009 as intended. While there have been a number of reasons for the delays, the resignations of key staff in 2011-2012 have contributed to the delayed start dates of a number of projects and the deferment of others, including coastal protection projects..

The risks are that projects under the NAPA1/+, which are due to be completed by November 2013, will be rushed to meet the deadlines and not completed appropriately.

The Audit was unable to confirm whether a Cost Benefit Analysis to prioritise the adaptation measures had been carried out as recommended in the NAPA guidelines. The absence of such analysis may lead to the incorrect prioritisation of the adaptation measures.

Recommendation;

- 7.4 The DoE and NAPA office carry out a Cost Benefit Analysis to confirm the Program Priorities, or if the Cost Benefit Analysis has been completed, locate and review it.
- 7.5 The DoE and NAPA office review project management procedures and practice to ensure target projects and programs are achieved on time and within budget

Management Comments:

A four week period was given for management to provide comments and Audit followed up management with phone calls and emails. No comments have been provided by management for this section.

7.3 Policies identify the key risks (evidence based) of coastal erosion and actions to address the risks.

As indicate earlier in the report, the Coastal Zone Management Policy is yet to be developed. In order to assist DoE with the process, the Audit sought advice from the senior crown council in the Attorney General’s office on the steps to be taken on how to develop a new

policy in Tuvalu. The advice was that the department concerned must first identify the problem (factual evidence) and the need for the written policy and then undertake the following steps:

1. Identify beneficiaries, stakeholders and those affected.
2. Conduct consultation with beneficiaries, stakeholders which includes views from the public (island communities, women, students etc.).
3. Formulate the policy.
4. Ministerial approval for the policy to be implemented.
5. Adopt the policy.
6. Oversee policy implementation.
7. Policy Evaluation and Revision or Modification.

Development of Tuvalu's Coastal Zone Management Policy

In the developing Tuvalu's Coastal Zone Management Policy, the DoE has already identified beneficiaries, stakeholders and those affected by the problem of coastal attrition of which are mostly land owners. The DoE has conducted visits to the severely eroded coastal areas to gather evidence on the impact of climate change in order to assist with the development of the policy.

Additionally, the DoE with the assistance of the lands and survey department was able to locate sites that are more vulnerable to flooding on Funafuti Atoll by comparing satellite imagery to the size of the land areas and survey records.

The coastal protection policy has being included in the NAPA1/+ annual work plan for 2013, and there are allocated funds under the NAPA project for the development of the policy.

Recommendations:

- 7.6 When drafted the Coastal Zone Management Policy should:
- reflect the key risks that climate change poses for the Tuvalu coastline;
 - include key risks that are based on risk assessments and reliable studies and research;
 - support the Environment goals identified in the NSSD "Te Kakeega II" 2005 – 2015; and
 - align with Environment Protection Act and also regional and international frameworks that Tuvalu is signatory to.
- 7.7 Establish a Coastal Zone Management committee to oversee performance and challenges faced in the development of the coastal zone management policy. This could be as part of a general committee to oversee all policies related to environmental issues, not only NAPA related priorities.

Management Comments:

A four week period was given for management to provide comments and Audit followed up management with phone calls and emails. No comments have been provided by management for this section.

7.4 Policies and actions are supported by effective implementation plan that outline resources, timing and monitoring progress of the project.

RELEVANT PLANS

Tuvalu has two relevant implementation plans that govern Coastal Protection Management. These plans are listed in table 7.1.5 below.

Table 7.4.1: Relevant Implementation Plans Identified

Relevant Plans	Implementing Agency	Link Towards Coastal Management and Climate Change.
Tuvalu National Strategic Action Plan (TNSAP) 2012 - 2016	DoE	Supports the Tuvalu Climate Change Policy by identifying strategic actions to be taken, responsible agencies, implementation arrangements, costing of implementation and monitoring and evaluating.
NAPA Annual Work Plans	NAPA project and DoE	Annual work plan that supports the NAPA. It highlights certain targets for the year, planned activities to archive those targets, implementing agencies, timing and budgeted amounts.

TUVALU NATIONAL STRATEGIC ACTION PLAN (TNSAP)

The TNSAP was developed at the same time as the TCCP, and were both endorsed during the 2011 National Climate Change Summit. The TNSAP is considered as the operational/implementation plan for Tuvalu's Climate Change Policy (TCCP). The TCCP and the TNSAP should be read and considered together.

The TCCP identifies the 7 thematic goals to address and adapt to climate change impacts, whereas the TNSAP gives the goals, strategies, key actions and responsible agencies that are considered relevant towards achieving the 7 thematic goals.

The table below shows the identified target activities that relates to coastal protection management within the TNSAP.

Table 7.4.2: Coastal protection strategies with key actions identified within TNSAP

Thematic Goal 1: Strengthen Adaptation Actions to Address Current and Future Vulnerabilities		
Strategies	Key Actions	Implementing Agency
1.2 Assessment and analysis of salt and/or heat tolerant food crops (e.g. pulaka) and tree species for coastal protection	1.2.1 Conduct research on current and other possible food crop and tree species on their salt and/or heat tolerance capability. 1.2.2 Develop nurseries to nurture selected food crop and tree species that are salt and heat tolerant 1.2.3 Create awareness and distribute planting materials of the food crop and tree species that are salt and/or heat tolerant	MFATTEL, MNR, NAPA
Thematic Goal 4: Develop and Maintain Tuvalu’s Infrastructures to Withstand Climate Change Impacts, Climate Variability, Disaster Risks and Climate Change Projection		
4.2 Physical planning and development control for Funafuti and the Outer Islands	4.2.10 Conduct site specific assessment (including assessment of lagoon water quality, circulation and lagoon water chemistry) to inform planning for coastal protections and causeways constructions.	MFATTEL, MNR, NAPA and Ministry of Public Utilities

(Source: TNSAP 2012-2016)

From reviewing the TNSAP, the Audit found that TNSAP has considered coastal protection measures. The NAPA coordinator was confirmed that the above coastal protection key actions identified (Thematic goal 1, Strategy 1.2) have been implemented. They have identified salt tolerant plants, constructed nurseries and as well as planting of these salt tolerant plants on coastal affected areas. (Refer to Green Technology Project in LOE 2 below).

However for the Thematic Goal 4, the Audit confirmed with DoE that there are site specific assignments proposed for international research bodies to conduct assessment of lagoon water quality, circulation and water chemistry. JICA has conducted specific site assessments for the 2 projects, Forum Sand project and Beach Nourishment project which will be discussed later in the report.

For coastal protection construction there were seawalls being built by Public Works Department and which involved community participation. However, these were not effective and were destroyed by storm surge. Through the NAPA 1/+, the DoE has approved three coastal protection projects – Wave breaker and Seawall construction using ELCO rocks – which will also be discussed later in the report.

Audit Findings

As the TNSAP has identified climate change adaptation strategies, the Audit found that there are no timelines, detailed budgets and no indication on how the progress of each goal is to be monitored.

Salt tolerant plant and trees have been planted on most of the coastal areas. However the Audit noted that there is a lack of maintenance of these plants to ensure they remain healthy. The assessment of the impact on the planting of these trees will not be able to be performed if the trees are not maintained. (Refer to audit findings under Green Technology Project)

Recommendations:

- 7.8 The TNSAP includes timelines, budget details and progress monitoring arrangements for the successful implementation of planned activities.
- 7.9 NAPA ensures proper maintenance of salt tolerant plants and trees planted along coastal areas.

Management Comments:

A four week period was given for management to provide comments and Audit followed up management with phone calls and emails. No comments have been provided by management for this section.

NATIONAL ADAPTATION PLAN OF ACTION ANNUAL WORK PLAN (NAPA AWP)

The NAPA AWP was also considered a relevant plan as some of the activities related to coastal protection. The NAPA AWP is a document compiled by the NAPA on an annual basis highlighting target activities to be performed during the year, expected outcomes, timing of activities, implementing agencies and planned budget for targeted activities. It also identifies key constraints that affect targeted activities and projects identified.

Audit Findings

The NAPA has an AWP for each of the years 2010, 2011, 2012 and 2013. From reviewing these AWP's, the planned activities that relate to coastal protection and coastal management are:

- **Establishment of a Coastal Zone Management Policy.** The establishment of a coastal zone management policy was one of the targeted activities in the NAPA AWP for 2010, 2012 and 2013. There has not been any work done on establishing a Coastal Zone Management Policy.
- **Developing and implementing of a Community Based Adaptation Plan for coastal protection.** Development and implementation of the Community Based Adaptation Plan for coastal protection was also considered within the NAPA AWP for 2011. Audit found that there has been no effort made to achieve this targeted activity and was unable to find a reason why it was not included in the 2012 and 2013 AWP.
- **3 coastal protection projects.** There were 3 coastal protection projects identified under the NAPA which includes Seawall construction, Wave breakers construction and Green Technology. The only project that has started is the Green Technology project.

Recommendations:

- 7.10 NAPA develops a system for the monitoring, reviewing and reporting on the progress of the NAPA AWP targeted activities to ensure targeted activities set out within their AWP are achieved.
- 7.11 DoE performs an assessment of the achievability of the planned activities to ensure that the AWPs are realistically able to be complied with in the future.

Management Comments

A four week period was given for management to provide comments and Audit followed up management with phone calls and emails. No comments have been provided by management for this section.

Conclusion

The Audit found that Tuvalu was signatory to the MDG and the UNFCCC, which provided an agenda for action on a number of issues including climate change and guidelines on developing a National Adaptation Plan of Action. Part VIII of the Environmental Act requires that relevant projects, policies and programs be developed to address the impact of climate change.

The Audit also found Te Kakeega II – National Strategies on Sustainable Development (NSSD) does not fully consider the problem of coastal erosion in Tuvalu and that there is no policy that specifically focuses on coastal protection management in Tuvalu.

The NAPA Annual Work Plans (AWP) for the years 2010, 2011, 2012 and 2013 included a number of planned activities that relate to coastal protection and coastal management, but only one of the NAPA activities have been implemented. For example, the development of a Coastal Zone Management Policy was one of the targeted activities in the NAPA work plans for 2010, 2012 and 2013, and although work on drafting the policy has commenced, it is incomplete.

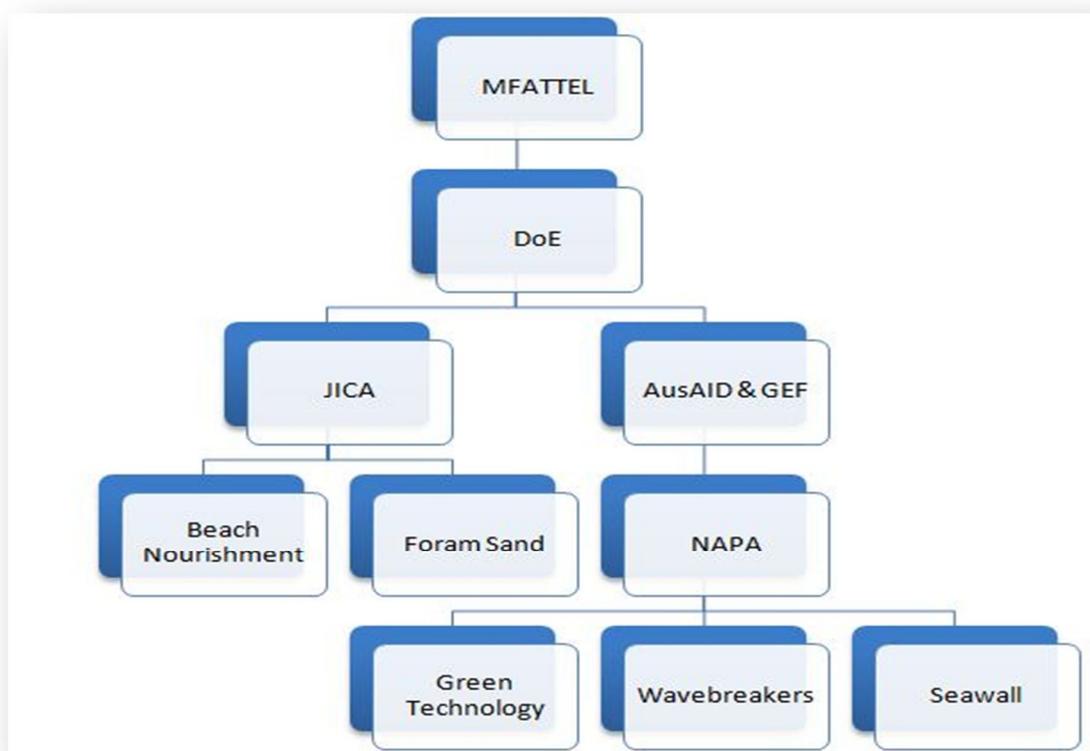
8. LOE 2: Have coastal protection projects and programs been implemented effectively, efficiently and economically?

This section in the report focuses on the second line of enquiry (audit objective) and examines the management of projects and programs; whether funds have been used for the purpose intended; whether project monitoring is in place to monitor performance and to address under performance; and whether project delivery is coordinated and roles, responsibility and accountability of the project are clear.

8.1 Projects and Programs shall be identified, timed, budgeted and planned to protect Tuvalu's coast from sea level rise and storm surge.

The Government through the DoE has approached several development partners to assist Tuvalu in resisting the effects of climate change. Projects under Coastal Protection are funded by Australian Aid (AusAID), GEF and JICA. The figure below shows each development partner and the respective projects they are assisting financially.

Figure 8.1.1: Development partners and respective projects they are assisting financially.



The DoE has proposed a number of projects and programs aimed at the protection of coastal areas of affected islands from coastal erosion.

The project title for these programs and projects was to 'Increase resilience of coastal areas and community settlement to climate change'.

The acting director of DoE reported that, based on community consultations and training, and workshops on the impact of climate change, community leaders from the islands of Funafuti, Nukufetau and Nukulaelae expressed their concern about coastal erosion and requested coastal protection projects. The remaining six islands requested water security and food security projects.

There are 5 Coastal Protection projects in Tuvalu, being funded by JICA and GEF as follows:

- The foram sand project (Funafuti island) - funded by JICA
- Gravel beach nourishment project (Funafuti island)- funded by JICA
- Wave Breakers Construction Project (Nukufetau Island) – funded by GEF
- Seawall construction using Elco Rock Bags (Nukulaelae Island) – funded by GEF
- Planting Of a Green Belt (Green Technology) project (all islands)- funded by GEF

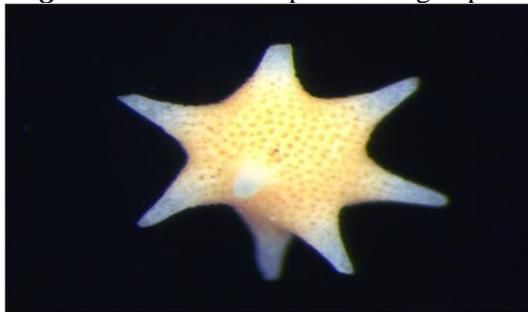
JICA FUNDED PROJECTS

FORAM SAND PROJECT on Funafuti Island

Figure 8.1.2: sand generated from Foram



Figure 8.1.3: Foram species marginopora



One of the coastal protection projects that has been implemented and is operating in Tuvalu is the Foram Sand regeneration project in Funafuti.

Forams /Foraminifera are organisms that are mostly found living in aquatic places. The majority of these species live on or within sea-floor sediment with a small number of species known to be floaters in the water column at various depths. Foraminifera typically produce a test, or shell, which can have either one or multiple chambers, some becoming quite elaborate in structure. These shells form sand.

The Foram Sand project focuses on the regeneration of sand through two research themes: i) Reproduction of three foram species known as, *Baculogypsina*, and *Amphistegina* and *Marginopora* which are the most dominant foram species found in Funafuti ii) Clarification of impacts of human activities on the sand sedimentation mechanism.

The project is funded by the Government of Japan through JICA and is managed by the MFATTEL. The project is aiming to regenerate foram sand to recover lost beach due to coastal erosion and to acquire scientific knowledge and skills on foram sand production.

Surveys and studies conducted using aerial photography of Funafuti, revealed that before World War II, the island was fringed with foram sandy beach, which means island formation process was actively conducted.

Today the, sandy beaches are restricted to isolated parts showing that the island formation process has slowed. It was also revealed that almost three quarter of the entire island sands are foram sand.

Figure 8.1.4: Funafuti water front fringe with sandy beaches, before World War II



THE WATERFRONT AT FUNAFUTI

(Source: <http://nzetc.victoria.ac.nz>)

GRAVEL BEACH NOURISHMENT PROJECT of Funafuti Island

Considering the adverse impacts of climate change to Tuvalu's coasts, JICA proposed a gravel nourishment project as a countermeasure to reduce the disaster risk associated with sea level rise and storm surge.

Gravel beach nourishment has never been tried in Tuvalu. The Government in May 2011 requested the Government of Japan for assistance to examine the effectiveness and adequacy of gravel nourishment in Tuvalu. Site selection was made possible with the involvement of the JICA team.

The beach/gravel nourishment project focus was on reclaiming land towards the ocean side on Funafuti with the use of gravel and sand. A team from Japan has conducted site selection research and observation and has agreed on a particular spot for the project. What is now left is the construction phase.

The project started in April 2012 and was expected to come to an end on November 2014⁹ with an aim to further address coastal erosion and reduce disaster risk associated with overtopping waves and inundation. The gravel nourishment project was also funded by the Government of Japan through JICA.

Audit Findings on JICA funded Projects

The DoE advised that the two JICA projects have been endorsed by the Minister for FATTEL and the JICA has allocated budget.

The Audit requested project reports that show allocated budget amount, allocated resources and timing of the project from the DoE project managers, however, the DoE was unable to provide any evidence to support its claim about project budgets or provide any information on how the project will be managed. Without this information, it is not possible to assess whether the project is delivered on time, proper utilisation of its allocated cost and is achieving its target outcome.

⁹ Inception report for project for pilot gravel nourishment against coastal disaster of Funafuti Island in Tuvalu 2012

Acting Director of DoE advised that gravel beach nourishment project is likely to be discontinued due to disagreement between the JICA project team and the Government. This suggests that inadequate planning and consultation has occurred for this project.

Recommendation;

- 8.1 Proper consultation between project team and the Government occurs before commencing a new project, to ensure that the project's goals are satisfactory to the Government of Tuvalu.
- 8.2 There should be a signed agreement between the project team, island leaders and the Government on any project they wish to carry out.
- 8.3 Project documents are filed correctly for ease of future referencing.

Management Comments:

A four week period was given for management to provide comments and Audit followed up management with phone calls and emails. No comments have been provided by management for this section.

GEF and AusAID FUNDED PROJECTS / Projects under NAPA 1/+

GEF and AusAID have agreed to fund two projects which relate to coastal protection. They are described below.

Wave Breakers Construction Project on Nukufetau Island

Placement of wave breakers or channel current breakers structures within the channels between islets and other locations of strong current flow will dissipate coastal current force and this will decrease erosion on coastal areas of islets.

Wave breakers are either constructed some distance from the coast or built with one end linked to it, in which case they are usually called sea walls. Their design is influenced by the angle of wave approach and other environmental factors. Wave breaker construction can be either parallel or perpendicular to the coast, depending on what is best to maintain tranquil conditions.

In consultations with island leaders, Nukufetau requested for a wave breaker to be constructed on their island. The NAPA coordinator has approved the construction of wave breakers in Nukufetau, however, they are yet to identify the inception date of the project.

The acting director of DoE, confirmed that the allocated budget has been approved for the project, however, there has not been any work performed.



Figure 8.1.5: Wave breakers construction methods (perpendicular and parallel).

Source: Wikipedia

Planting Of a Green Belt (Green Technology) Project

Because of coastal erosion, the NAPA project has also encouraged the planting of special trees that are of high salt resistance, drought tolerant and prefer sandy soil. 'Kanava' trees (beach Cordia), 'Fetau' trees (Calophyllum inophyllum) and mangroves are amongst the recommended trees that assist in controlling coastal erosion.

Figure 8.1.6: Tree Planting Nurseries (300 mangroves) *Source: NAPA*



This project is funded by the Global Environment Fund (GEF) through the United Nation Development Program (UNDP) and is being implemented under NAPA. Nurseries were built to grow plants of the above species in an optimum temperature with fertile soil until they are ready to be transplanted to coastal sites (see figure above).

In most of the islands, members of the community participated in the planting of these selected species of trees in targeted areas which were heavily affected by coastal erosion. Community participation in the planting phase of the project was one of the achieved targets as the island community was involved in the planting of trees. Nearly all of the coastal areas towards the ocean side in Funafuti Island have been planted by members of the community, with the project compensating the community with \$100AUD for every tree planted (see figure below).

Figure 8.1.7: Tree planting, Kavatoetoe village. (6 plants remaining) *Source: NAPA*



PROBLEM FACED RESULTING IN THE DELAY OF PROJECTS.

The Audit found that the delays in projects were caused by a number of reasons:

- There are only two vessels in Tuvalu that transport project resources and machinery from the capital island to outer islands. Given the small size of vessels and loading

capacity, projects face difficulties in the shipping of materials and machinery to outer Islands which results in the delay of projects.

- Changes in shipping schedule are also common due to unpredictable weather conditions or by political discretion. Mechanical faults are also a concern as vessels are stuck in port until faults are rectified.
- The National Ekalesi Kelisiano of Tuvalu Conference (Christian Church Conference) which is held every year in outer islands also caused delays as key personnel and island leaders stationed in outer islands attended the conference. As a result, some of planned activities of projects were delayed until key personnel and island leaders returned to their respective stations. The conference also caused a delay in shipping as the vessels only focused on the shipping of attendees to the meeting whereas all the shipment of all cargos was on hold.
- Delay in shipment of tools from Fiji is also another factor that held back the progress of the preparation of nurseries, and also the digging or mulching of plant holes.
- Sporadic communication with outer islands was also a concern. Slow internet connection in Tuvalu and minor technical difficulties on land line phones contributed to delays.

Audit Findings on SOPAC, GEF and AusAID funded projects

Tuvalu relies heavily on SOPAC, and assistance from other international research bodies to conduct research and studies of the Tuvaluan sea, coastal and land areas. In the event where the SOPAC team or other international research bodies arrive late all work will be in a state of uncertainty until the research team arrives.

The Audit found that, except for the Green Technology Project, all GEF funded coastal protection projects have stalled awaiting SOPAC arrival to carry out studies and research on Tuvalu's coasts. The Audit considers that reliance on SOPAC could be reduced if DoE sought opportunities for its staff to enhance their own research and scientific study capability on the vulnerability of Tuvalu's coast to the impacts of climate change.

Some members of the community were not aware of or did not support the management of the green technology project and have been accidentally or intentionally uprooting some trees. Some of the trees have been destroyed by fishermen in the process of transferring canoes and fishing boats to the lagoon.

All of the above mentioned GEF funded projects have been approved, budgeted and planned. The Audit requested DoE provide project reports that outlines resources allocation, budgeted amount and as well as a timeframe for the projects. We were not provided with any of the requested documentation. As these documents are critical to the projects being managed correctly, not having these on hand increases the risk of a project not being completed on time, within budget or successfully.

Recommendations:

- 8.4 DoE considers seeking opportunities for its staff to enhance its own research and scientific study capability on the vulnerability of Tuvalu's coast to the impacts of climate change.
- 8.5 NAPA develops an awareness program to inform the public routinely of the purpose and benefits of the Green Technology project to prevent damage and loss of plants. Additionally impose penalties and fines to penalise members of the public who are damaging property.

8.6 DoE improves its project recordkeeping to assist with the management of its projects.

Management Comments:

A four week period was given for management to provide comments and Audit followed up management with phone calls and emails. No comments have been provided by management for this section.

8.2 Projects funds are used for their intended purpose

The following table identifies GEF funding allocation to Tuvalu and utilisation by Tuvalu.

Table 8.2.1: GEF funding allocation and utilisation

GEF funding allocation	Indicative allocation USD	Utilization USD	Remainder available for Utilization USD
GEF RAF*	3,300,000	500,365	2,799,635
GEF STAR**	2,000,000	\$0	2,000,000
*Resource Allocation Framework operated from 2006-2010			
**System for Transparent Allocation of Resources appropriates from 2010			

(Source: GEF website http://www.thegef.org/gef/country_profile/)

Audit Findings

The above table shows the underutilisation of funds allocated to Tuvalu for Climate Change adaptation measures.

- USD3.3 million was allocated to Tuvalu under GEF RAF for Climate Change adaptation programs and projects, but only 15% (USD500,365) of the allocated funds have been used.
- Similarly, under GEF STAR allocation, Tuvalu was allocated USD2 million for Climate Change adaptation programs but so far, none has been used.

Recommendation:

8.7 The audit recommends that DoE improves its project management so that funds allocated to Tuvalu from development partner agencies for climate change mitigation programs and projects are being utilized in accordance with milestones in the project plan.

Management Comments:

Tuvalu did not have a national allocation under RAF, allocation under RAF was allocated regionally. Hence limited benefits were received by Tuvalu. However we have several projects on Climate Change mitigation and Biodiversity which has recently approved under RAF.

Tuvalu through the DoE has submitted to GEF proposal to utilise all its allocation under GEF STAR. All these allocation has been programmed.

FUNDS ARE USED FOR THEIR INTENDED PURPOSES

All funds received to facilitate any Coastal Protection projects are deposited directly into the Tuvalu Development Fund (TDF) bank account as stipulated under *Public Finance Act section 19 (2)*. This section states:

- (2) *The Development Fund shall consist of the following moneys —*
- (a) *such moneys as may be appropriated for the purpose by Parliament;*
 - (b) *moneys received from any other Government and anybody or person as grants to the Government of Tuvalu for development purposes;*
 - (c) *moneys received from the proceeds of loans raised for the purpose by or on behalf of the Government;*
 - (d) *moneys received by way of interest or dividend on any investment or loan of any moneys belonging to the Development Fund;*
 - (e) *moneys earned by or received in reimbursement of any project financed wholly or in part from the Development Fund;*

Provided that the moneys referred to in paragraph (b), (d) or (e) may with the prior approval of Parliament in any case be paid into the Consolidated Fund or such other public fund as the Minister may in each case designate.

Any funds deposited into the TDF will be controlled and monitored by the Ministry of Finance and Economic Development (MFED). For the purpose of ensuring that the funds are used for their intended purpose, under the *Public Finance Act section 19 (3)*; states that;

- (3) *The Development Fund shall be operated in accordance with the Rules set out in the Schedule to this Act.*

See the schedule in Appendix 1 to this report. In order to expend funds on Coastal Protection projects the following process and controls are in place:

- **Authorisation on spending**

For any payment, a Payment Voucher (PV) will be written up by the administrator of the project and will be checked by project coordinators. Project coordinators will ensure that what is procured is relevant to the project operation. Once the coordinator approves the PV, the PV will then be sent to the DoE for the payment to be processed. The cheque will be recorded and approved by the Treasury department under the MFED and authorised by the Permanent Secretary of the Ministry of Foreign Affairs, Trade, Tourism, Environment and Labour, Director of DoE and the Project Coordinator.

The process of authorisation can be time consuming and cause delays due to frequent changes in authorising officers resulting from overseas travel and other work related commitments. When one of the authorising officers is away, a staff acting on his/her behalf will take over in the authorisation and approval of documents.

- **Direct Payment on all spending above \$5,000**

Development partners are sensitive on how projects spends their allocated budgets and have set a AUD5000 threshold so that items that costs more than that will paid directly by the development partner.

The administration assistant will send a request for direct payment form to the development partner requesting for a direct payment to be made. Once the development partner has settled the requested amount, a special receipt will be sent to the project accountant to confirm payment has been made.

- **Reconciliation of procurements**

Projects accountants are to send a quarterly report to development partners on the amount expended and received during the 3 months period. All procurements will be entered by development partner agencies into their accounting system. On a regular basis, development partners will reconcile their records with Treasury department records to ensure that all procurements have been accounted for.

8.3 Projects monitoring should be in place to monitor performance and to address under performance.

The continuous monitoring of projects is an essential component in the successful implementation of projects. During the course of the audit, we assessed the framework in place to monitor project performance.

As mentioned above, projects are classified under development partner agencies namely JICA, GEF and AusAID. Therefore each development partner has its own monitoring body that checks project and program performance.

PROJECT MONITORING UNDER JICA

JICA guidelines for Environment and Social Consideration require the recipient Government to perform monitoring activities that ensure targeted activities are performed.

When implementing bodies do not have sufficient capacity for monitoring, JICA provides cooperation regarding monitoring by means of human resource development including trainings in certain skills.

Appendix 1 of the JICA guideline, Requirement of the Recipient Country – Monitoring outlines the following requirements for project monitoring;

- It is desirable that, after projects begin, project proponents monitor the following: whether any unforeseeable situations occur and whether the performance and the effectiveness of mitigation measures are consistent with the assessment's prediction.
- It is also desirable that they then take appropriate measures based on the results of monitoring. In cases where sufficient monitoring is deemed essential for appropriate environmental and social considerations, such as projects for which mitigation measures should be implemented while monitoring their effectiveness, project proponents must ensure that project plans include feasible monitoring plans.
- It is desirable that project proponents make the results of the monitoring process available to project local stakeholders.
- When third parties point out, in concrete terms, that environmental and social considerations are not being fully undertaken, it is desirable that forums for discussion and examination of countermeasures are established based on sufficient information disclosure and include the stakeholders participation in relevant projects. It is also desirable that an agreement be reached on procedures to be adopted with a view to resolving problems.

Audit Findings

DoE is the governing body that monitors JICA projects and programs to ensure that they are performing according to plan. However, the Audit found that there is no regular monitoring performed on JICA projects and programs.

The Audit requested copies of project monitoring reports but none were available.

PROJECT MONITORING UNDER GEF and AusAID (NAPA projects)

The currently installed monitoring measure for NAPA managed projects involves regular reporting to UNDP which is performed by the Project Management Unit, as well as a mid-term review which is facilitated by UNDP and occurs every two years. The latest mid-term review was in May 2013.

Regular Reporting to UNDP on status of the NAPA project

Project reporting is by and large carried out in a comprehensive and timely manner and normally quarterly. Within the quarterly report, the NAPA coordinator reports on the current status of the report and what has been achieved, key risks or limitations faced by the project, lessons learned and on targets to be achieved in the next quarter.

NAPA Mid Term Review

The purpose of the Mid-term review is to:

1. Identify potential project design problems;
2. Assess progress towards the achievement of objectives;
3. Identify and document lessons learned; and
4. Make recommendations regarding specific actions that might be taken to improve the project.

The scope of the evaluation in 2013 was to investigate 5 key elements: project design and formulation; project implementation; operations, policies and procedures; results; lessons learned and recommendations. A range of evaluation methods were used, including a desk review, interviews, focus groups, a time use study and gender assessment. Results of the mid-term review are detailed in the Appendix 2.

Apart from the mid-term review, the NAPA's own monitoring arrangement is through the position of an independent evaluator and monitoring officer. The officer's role is to perform monitoring work to ensure projects and programs are performing as expected.

Audit Findings

The Audit found that:

- The NAPA does not have a formal monitoring framework that sets out monitoring activities.
- Project reporting is carried out in a comprehensive and timely manner, although there are limitations in result based reporting and monitoring.
- There is no independent evaluator or monitoring officer. The position has been vacant for a period of time.

Recommendations:

- 8.8 DoE ensures regular monitoring of JICA projects and programs is conducted to keep in track of performance and to address under performance.
- 8.9 The NAPA should take immediate action to formalize a monitoring framework to set out clear monitoring activities.
- 8.10 The NAPA should take immediate action to appoint an independent evaluating officer.

Management Comments:

Any UNDP executed projects should have monitoring mechanism in place therefore NAPA has means of monitoring in place. Refer to project documents and Annual Work Plans.

An independent evaluating officer is a contract position, and will only be appointed when monitoring and evaluation is due.

8.4 Projects delivery is coordinated and roles, responsibility and accountability of the project are clear.

The Department of Environment and the NAPA are the two key agencies involved in the coordination and implementation of coastal protection project.

The acting director for DoE is the project manager for the NAPA projects and the chairwoman of the NAPA Project Board.

Project delivery under NAPA 1/+

The NAPA 1/+ draws-up an annual work plan before the period begins. The annual work plan is usually developed by the PMU with the assistance of UNDP, and approved by the Project Manager and NAPA Project Board.

Through the approved work plan, the NAPA 1/+ project coordinator further draws activities to suit the work plan and is given to the NAPA Project Board to approve.

Audit Findings

During the interview process, the NAPA 1/+ administration assistant, confirmed that it is time consuming in the approval process to approve activities. It can be due to frequent travelling of approval officers to attend work related conferences and commitments.

Recommendation:

8.11 An officer independent of the preparation of the work plan and activities should approve the activities and work plan. It is considered good practice to involve the development partners in the work plan approval process.

Management Comments:

The PMU prepares Annual Work Plan with the assistance from UNDP. It will then be submitted to the NAPA Project Manager and Project Board for approval.

Conclusion

In relation to whether coastal protection project and programs have been implemented effectively, efficiently and economically, the Audit found that only some of the coastal protection projects had been completed and there has been a significant underutilisation of budget funds. Most of the approved coastal protection projects under the NAPA 1/+ are still yet to commence and therefore effectiveness, efficiency and economy cannot be assessed due to their current status.

The Audit concluded that the program governance arrangements, including sound management and project monitoring need to be developed, to support coastal protection programs and projects funded by the development partners.

Tuvalu relies heavily on SOPAC and other international research bodies to conduct research and studies of Tuvalu's sea, coastal and land areas. The risk that this poses is projects can be delayed if the visits to Tuvalu are deferred.

9. Overall Conclusion

Rising sea levels from the impact of climate change means that coastal protection is an important issue for Tuvalu. This is supported by coastal protection being identified by island leaders as Tuvalu's first priority.

In relation to whether Tuvalu has an effective framework to manage coastal protection, the audit concluded that there was relevant legislation that addressed environmental issues, however, there is a lack of alignment between legislation, policies and plans. This potentially jeopardises current and future coastal erosion management measures.

In relation to whether coastal protection project and programs have been implemented effectively, efficiently and economically, the audit found that only some of the coastal protection projects had been completed and that there has been a significant underutilisation of budget funds.

Program governance arrangements, including sound management and project monitoring need to be developed. This is in order to support coastal protection programs and projects funded by development partners.

Appendix 1: Rules for the operation of the TDF

1.
 - (1) No moneys shall be issued from the Development Fund (hereinafter called “the Fund”) for the purpose of meeting any expenditure except in accordance with a Development Warrant under the hand of the Minister.
 - (2) Subject to rules 3, 4, 5 and 6 no Development Warrant shall be issued unless the expenditure in question has been authorised by Parliament by resolution.
2.
 - (1) The Minister shall cause to be prepared in each financial year estimates of the revenue and expenditure of the Fund for the next following year.
 - (2) The proposals for all expenditure contained in the estimates shall be submitted to Parliament before the end of the financial year to which they relate, together with a statement showing the estimated balance of the Fund at the commencement of the next financial year and the anticipated revenue accruing to and total expenditure from the Fund during the next financial year.
3.
 - (1) If Parliament has not yet authorised for any financial year the expenditure of sums necessary to finance the continued construction and provision of development works for which provision was made from the Fund in the previous financial year the Minister may by warrant authorise the issue from the Fund of such sums as are necessary to finance the continued construction and provision of such works to enable such works to be carried out for a period of 4 months or until the expenditure of sums necessary to finance the continued construction and provision of such works has been approved by Parliament whichever is the shorter period.
 - (2) Notwithstanding paragraph (1) no sum may be issued under this rule in respect of any subhead where such sum would be in excess of 20 per cent of the estimate of the total cost for such sub-head as it appears in the development estimates or supplementary development estimates approved by Parliament.
4.
 - (1) When in any financial year the development estimates or supplementary development estimates for that year include an estimate of total cost for any subhead, over any period, which is in excess of the total sum appropriated for that sub-head for the current year the Minister may by warrant authorise the expenditure of any sum which, when added to the expenditure incurred on the corresponding sub-head in previous years and to the expenditure already authorised for the same sub-head for the current year, does not cause to be exceeded the latest estimate of total cost for that sub-head included in the development estimates or supplementary development estimates approved by Parliament for that year.
 - (2) When at the commencement of any financial year the provision included for any sub-head in the development estimates or supplementary development estimates of the immediately preceding financial year has been only partially expended the Minister may by warrant authorise the expenditure of the unspent balance of such provision under a corresponding sub-head in the current financial year: Provided that the amount so authorised shall not when added to the expenditure incurred in previous years and to

the provision already made in the current year, exceed the latest overall estimate of total cost for the subhead included in any development estimates or supplementary development estimates approved by Parliament.

(3) No warrant under this rule shall authorise the issue of an amount which if it were expended at once would exceed the balance of the Fund remaining after all other expenditure authorised for the year has been provided for.

5.

The Minister may by warrant authorise the issue from the Fund of such sum as may be necessary for expenditure under any sub-head of a special character which is not provided for in the expenditure already authorised by Parliament for that year and which cannot or cannot without serious injury to the public interest be postponed until adequate provision can be made by Parliament:

Provided that no such warrant shall authorise the issue of an amount which if it were expended at once would exceed the balance of the Fund remaining after all other expenditure authorised for that year has been provided for.

6.

(1) The Minister may in any year by warrant authorise the issue from the Fund of such additional sum as may be necessary for expenditure under any sub-head which has been authorised by Parliament for that year and the issue of which cannot without serious injury to the public interest be postponed until adequate provision can be made by Parliament:

Provided that no such warrant shall authorise the issue of a sum in excess of 20 per cent of the latest estimate of total cost for that sub-head as included in any development estimate except under the provisions of rule 5.

(2) No warrant under this rule shall authorise the issue of an amount which if it were expended at once would exceed the balance of the fund remaining after all other expenditure authorised for the year has been provided for.

7.

The Minister shall at the sitting of Parliament next following the issue of any warrant under rule 4, 5 or 6 present a supplementary estimate covering the expenditure to Parliament for its approval.

Appendix 2: Results of the NAPA Mid-Term Review

The project design and approach responds to Government and development partner needs, and by and large to local community needs. However, the project design did not appropriately consider challenges posed by communications and transport infrastructure to the outer islands of Tuvalu, which has led to severe project delays. Therefore, project design was deemed marginally satisfactory.

In terms of project implementation, the project has achieved some progress towards its objective of increasing protection of livelihoods from risks related to climate change. This has included progress in enhancing capacity of public administration to plan and respond to climate change risks, notably through developing national policies supportive of climate change. Further, progress has been achieved on enhancing capacities of local communities to adapt to climate change through practical community-based adaptation measures, namely on agriculture and water security. The project has however not linked these activities directly to climate change adaptation.

There are delays and shortfalls in implementing national awareness activities, doing community-based risk assessments and plans, implementing effective coastal protection measures; and the whole of Outcome 3 on capturing, analysing and disseminating knowledge and lessons learned. Gender inequalities are evident in the project's decision making structure, and women's specific needs have not been sufficiently considered in project activities. Institutional arrangements have faced challenges in terms of the technical capacity and continuity of the project's management unit; the functioning of the Project's Board; and the effectiveness of the Community Organizers based in all islands acting as project focal points. Overall project implementation was seen as marginally satisfactory.

Project monitoring has been weak to date. Project reporting is by and large carried out in a comprehensive and timely manner, although there are shortcomings in terms of both results-based reporting and monitoring. Operational and technical problems were identified in the fields of communications and technological infrastructure; recruitment; procurement; and technical capacity. Project finances are overall well-managed. The project has had significant delays in both budget implementation and project execution, whilst adequate adjustments have not been made. The project has succeeded in securing co-financing. Overall operations, policies and procedures were deemed satisfactory.

In terms of results, the project has suffered from inefficient use of funds, with severe delays in budget execution, in particular at national level but also through procurements processed via UNDP. Time use has also been inefficient, with severe delays in recruitment and procurements, and there is low evidence of adaptive management. Overall efficiency has been unsatisfactory. In terms of effectiveness, the project has achieved some results, whilst there have been severe delays in others, leading to overall marginally satisfactory effectiveness. The project has had some impact, including in terms of increasing food and water security and showing that new approaches to planning are required under climate change. Finally, sustainability is deemed marginally satisfactory. Capacity has been increased within Government to a certain degree, and a good policy framework is now in place, but more mainstreaming into sectorial departments is required. The project has been weak in building island level capacity, both due to inadequate training provided and to over-reliance on the Community Organizer structure. *(Source: extracted from the NAPA Mid-term evaluation of the Tuvalu NAPA 1 and NAPA 1+ project final report 2013.)*