NATIONAL ENVIRONMENT SERVICE
TU'ANGA TAPOROPORO
COOK ISLANDS

Cook Islands

Thematic Assessment Report

Biodiversity

Climate Change

Land Degradation

NATIONAL CAPACITY SELF ASSESSMENT
FOR GLOBAL ENVIRONMENT MANAGEMENT

September 2007

NCSA Cook Islands

Global Environment Facility

UNDP

Acknowledgements

The National Environment Service would like to gratefully express our gratitude to the NES staff, NCSA Steering Committee and Technical Working Groups, those individuals, experts, institutions and community groups who kindly gave valuable assistance and information during the NCSA Thematic Assessment consultations and compilation of this report.

Meitaki Maata.

This report was initiated by Tuaere Tangianau Upoko of UPOKO Solutions Ltd, Cook Islands, and completed by Louisa Karika, Pasha Carruthers, Joseph Brider, Tania Temata, Antoine Nia and Elizabeth Munro on behalf of the National Environment Service.

Edited with the assistance of the NCSA Technical Working Groups and Steering Committee, Will McGoldrick, Bill Carruthers, Joel Pokura, and Cameron Scott.

Prepared for the Cook Islands NCSA Project,
National Environment Service
COOK ISLANDS

List of Acronyms

ABS	Access and Benefit Sharing - refers to Equitable Sharing of Benefits and Access to Biological Resources
ADB	Asian Development Bank
AIACC	Assessment of Impacts and Adaptation to Climate Change
AOSIS	Alliance of Small Island States (for UNFCCC)
BCU	Biodiversity Conservation Unit of the National Environment Service
BPOA	Barbados Programme of Action
BTIB	Business Trade and Investment Board
CBDAMPIC	Capacity-building for Development of Adaptation Measures in Pacific Islands Countries
CBO	Community Based Organisation
CDM	Clean Development Mechanisms
CFC 12	Chlorofluorocarbon 12
CHARM	Comprehensive Hazards and Risks Management
CIANGO	Cook Islands Association of Non-Government Organisations
CLIMAP	Climate Change Adaptation Program for the Pacific
EIA	Environmental Impact Assessment
EMCI	Emergency Management Cook Islands
GEF	Global Environment Facility
GHG	Greenhouse Gases
GIS	Geographical Information Systems
GMO	Genetically Modified Organism
HOM	Head of Ministry
INC	Initial National Communication
IPCC	Inter-governmental Panel on Climate Change
LMO	Living Modified Organism
LPG	Liquid Petroleum Gas
MEA	Multilateral Environment Agreements
MFEM	Ministry of Finance and Economic Management
MMR	Ministry of Marine Resources
MOA	Ministry of Agriculture
MOE	Ministry of Education
MOH	Ministry of Health
MOT	Ministry of Transport
MOW	Ministry of Works
MOU	Memorandum of Understanding
NAP	National Action Plan for UNCCD
NAPA	National Adaptation Programmes of Action for UNFCCC
NBSAP	National Biodiversity Strategy and Action Plan
NCAP	National Compliance Action Plan for ODS
NCCCT	National Climate Change Country Team
NCSA	National Capacity Self-Assessment
NES	National Environment Service
NESAF	National Environment Strategic Action Framework
NGOs	Non-Government Organisations
NHT	Natural Heritage Trust
NSDP	National Sustainable Development Plan
ODS	Ozone Depletion Substance
OMIA	Office of the Minister for Outer Islands Administration
PEIN	Pacific Environment Information Network
PICCAP	Pacific Island Climate Change Assistance Program

PI-GCOS	Pacific Islands Global Climate Observation Systems
PILN	Pacific Invasives Learning Network
PIREP	Pacific Island Renewable Energy Project
POPs	Persistent Organic Pollutants
PopGIS	Population GIS – software programme
SARS	Severe Acute Respiratory Syndrome
SGP	Small Grants Programme (under the GEF)
SIDS	Small Island Developing States
SLM	Sustainable Land Management
SPREP	South Pacific Regional Environment Programme
SOPAC	South Pacific Applied Geoscience Commission
TAU	Te Aponga Uira o Tumu-te-Varovaro
TCA	Takitumu Conservation Area
TIS	Te Ipukarea Society
TKP	Traditional Knowledge and Practises
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention for Combating Desertification
UNDP	United Nations Development Program
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
V&A	Vulnerability and Adaptation Assessment (under Climate Change)
WSSD	World Summit for Sustainable Development
WWF	World Wide Fund for Nature

Table of Contents

Overview

Increasing recognition of the changes in the natural environment as a result of human interference has lead to the international community agreeing on a number of multi-lateral environmental agreements (MEAs). At the 1992 Earth Summit, world leaders agreed on a comprehensive strategy for "sustainable development" – meeting our needs while ensuring that we leave a healthy and viable world for future generations. Three key agreements from the Summit are the United Nations Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and United Nations Convention to Combat Desertification. These three are known as the Rio Conventions.

Each of these Conventions deals with the conservation and management of the natural environment with a view to ensuring resource protection within sustainable frameworks. As such they share common elements between the three that can overlap, requiring an integrated approach to the implementation of the three conventions. Lack of capacity at different levels has been identified by the international community, as well as various national initiatives, to be one of the key challenges that constrain implementation of these Conventions. Small countries like the Cook Islands already have strained resources and limited capacity, therefore it is important that international obligations are aligned with national priorities to ensure ongoing support for these initiatives.

As a party to these Conventions, the Cook Islands Government is committed to promoting cooperation between government agencies and other institutions and organizations, to develop synergies for implementation at the local and national level. The NCSA continues the self-assessment process and should help address some of our issues as well as support the development of new opportunities for funding.

Capacity Development

Capacity building and development can be defined as -

> *'the actions needed to enhance the ability of individuals, institutions and systems to make and implement decisions and perform functions in an effective, efficient and sustainable manner'*

It is a dynamic, endogenous process generally associated with training, human resources development, knowledge acquisition, the learning organization etc that builds upon existing capacity. By taking the definition of capacity literally, any action that is needed to strengthen environment management in the Cook Islands qualifies as a capacity building and development need.

There are three levels of capacity – systemic, institutional and individual. At the systemic level, the creation of 'enabling environments' is important, that is, the overall policy, economic, regulatory and accountability frameworks within which institutions and individuals operate. Relationships and processes between institutions, both formal and informal, as well as their mandates, are also important. The institutional level focuses on overall organizational performance capabilities, adaptability to change, clarification of structures, responsibilities and accountability, changes in procedures, communications and the deployment of human resources. Capacity building and development at the individual level refers to the process of changing attitudes and behaviours through imparting knowledge and developing skills, learning by doing, participation, and changes in management, motivation and morale. Having sufficient capacity at all levels will be key to ensuring the sustainability of our environment.

Project Background

1. The National Environment Service undertook the National Capacity Self Assessment Project (NCSA) for Global Environment Management, with support from the Global Environment Facility (GEF) through the sub-regional country office of the United Nations Development Programme (UNDP) in Samoa.
2. The GEF provides financial support to developing countries to protect and manage the global environment. Its activities are focused in four focal areas: biological diversity, climate change, international waters and depletion of the ozone layer. Activities addressing land degradation – especially, desertification and deforestation – are also funded when they relate to one or more of the focal areas. Project proposals for GEF funding are submitted through its implementing agencies – including the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), and World Bank.
3. The Cook Islands National Capacity Self Assessment (NCSA) Project evolved from many international declarations and policy statements such as the Agenda 21 and the WSSD Johannesburg Plan of Action and in the case of Small Island developing states, the Barbados Programme of Action. According to UN decision 2/CP.7, "capacity building is a continuous, progressive and iterative process, the implementation of which should be based on the priorities of developing countries."
4. This project was created under the Capacity Development Initiative (CDI) in order to address capacity needs issues countries may be facing. It provides the Cook Islands with an opportunity to review our global environmental responsibilities and determine how to reconcile these responsibilities with national sustainable development and environmental priorities. The overall aim of the NCSA process is to identify national priorities and needs for capacity building and development to address global environment issues, in particular, biodiversity, climate change and desertification/land degradation.
5. The NCSA should contribute to strengthening existing national programmes and should lead to targeted action plan development and implementation both within and across the thematic areas of biodiversity, climate change and land degradation. It should also help to identify linkages between global and national environmental management issues and capacity building efforts.
6. This project also provides an opportunity for the Cook Islands to review its national environment programmes across sectors. It provides a good basis to maximise synergies, linkages and understanding of issues between national and local level programmes, together with regional and international environmental frameworks.
7. The project is expected to collate information on continuing programmes, institutional structures, resource availability, future prospects, training activities and relevant supporting policies and processes needed to sustain the implementation of MEAs obligations nationwide. This is the second step towards accessing GEF resources for capacity development to implement the recommendations that will be presented in the NCSA Strategy and Action Plan.
8. This document is prepared for a multitude of stakeholders at the local, national, regional and international level. The term 'stakeholder' refers to a person, group, organization, etc, that has an interest or will be affected by actions or initiatives in different areas. The types of stakeholders affected in the NCSA process will depend on which thematic area is being addressed in each section. For example, the stakeholders affected under Mitigation of Climate Change, will not necessarily be the same as stakeholders affected by Adaptation.

Thematic Assessment Report

9. One of the expected outputs of the NCSA project is a description/inventory of capacity building needs in the three focal areas of biodiversity, climate change and land degradation and other related capacity needs. Other outputs include technical reports on the following;
    a. An account of the process by which the NCSA was prepared, including stakeholder

participation;

b. A stocktaking of previous and on-going activities related to capacity building under the Conventions for biodiversity, climate change and land degradation (such as enabling activities).
c. An identification of cross cutting issues and synergies, and
d. A Plan of Action to meet prioritised needs and a mechanism for monitoring and evaluating progress made in meeting those needs

10. The Thematic Assessment Report represents the third phase of the NCSA project. Expected outputs of the Thematic Assessment include the following;
    a. An account of the process by which the Thematic Assessment Analysis was conducted;
    b. Detailed outcomes of the Thematic Assessments Analysis models applied.
    c. A detailed description/inventory of capacity building needs to meet UNCBD, UNFCCC and UNCCD requirements with prioritisation to the extent possible, and other related capacity needs;
    d. Recommendations for future actions to address capacity needs for climate change, biodiversity and land degradation.
    e. Cross cutting issues and synergies identified through the Thematic Assessment process that will undergo in-depth analysis in the Cross Cutting Report.

Methodology

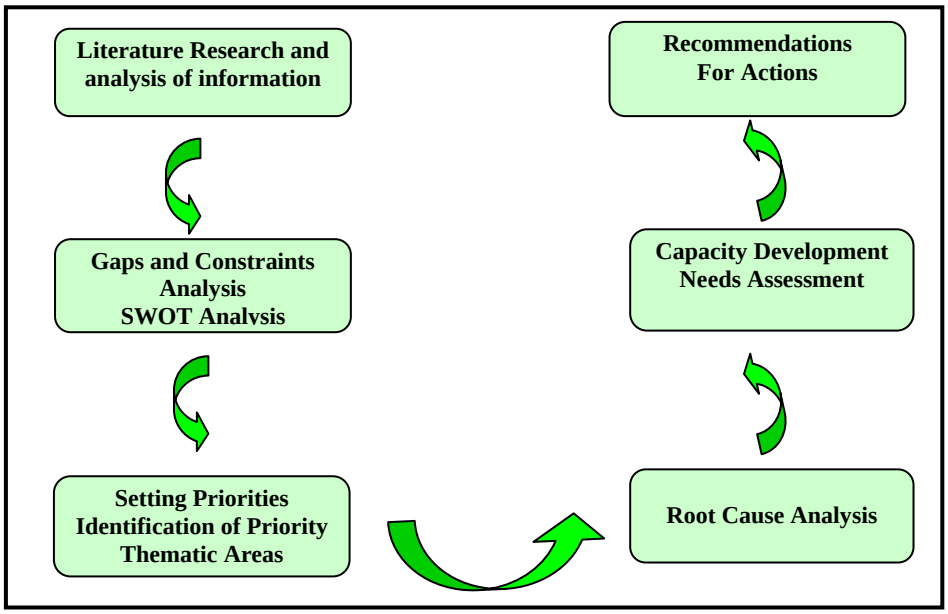
11. The thematic assessment analysis was initiated by Upoko Solutions Ltd and completed by the Synergy Working Group in consultation with the NCSA Technical Working Groups. The methodology applied in the thematic assessment process was provided for and highlighted in the NCSA Inception Report. The local consultant together with the NES Project Manager and the NCSA Coordinator were involved in the consultation meetings. Methodologies used include:
    a. Gathering of detailed information through desk study and analysis relating to the national and international activities focussed on the implementation of MEAs,
    b. Meetings and/or consultations with key government ministries and agencies, NGOs, private sector and community leaders.
    c. Further analysis using appropriate strategic analytical models.
12. The first step started with literature research and analysis of information from international, regional, national and local reports including the National NCSA Stocktake Report. These included the National Sustainable Development Plan, National WSSD Report, National BPOA+ 10 Report, National Environment Strategic Action Framework 2005 - 2009, First National Communications and the National Report for the Convention to Combat Desertification amongst others.
13. During the review, issues regarding capacity constraints and gaps within programmes at all levels were evaluated. Matrices were formed to ease the collation and processing of known and new information from the initial stages of the review.
14. New information was gathered from numerous consultations, Technical Working Group and Steering Committee meetings, and processed into the Gap Analysis and SWOT matrix to identify needs, constraints, existing capacities or opportunities that can be utilised or further developed at the systemic, institutional and individual levels.
15. Problem areas were crossed referenced with the NESAF priorities which then become prioritised into major thematic areas for further analysis.
16. The final in-depth Root Cause Analysis was conducted for each thematic area utilising National Environment Service staff, to determine constraints and barriers to implementation and progress at the systemic, institutional and individual level. The outcomes of the Root Cause Analysis were then consolidated and actions proposed to address the root causes in each thematic area. This step was a lengthy process which was only possible with the full

support of the National Environment Service and its staff.

17. Further meetings with the Technical Working Groups and Steering Committee were then conducted to review and further evaluate the outcomes of the root cause analysis and vet the information within the Thematic Assessment report. Over 100 hours of stakeholder consultation meetings were carried out over the course of this assessment.

Figure 1: Thematic Assessment Process

– Graphical representation of the Thematic Assessment Process. Stakeholder input at all stages.



18. The report is divided into four major parts:

- **Overview and Background**
- **Thematic Profile for Climate Change**
- **Thematic Profile for Biological Diversity**
- **Thematic Profile for Land Degradation**

Thematic Profile

Biodiversity and the UNCBD in the Cook Islands

I. Introduction to Biodiversity programmes and capacities

a. Background

1. The overall focus of the United Nations Convention on Biological Diversity (UNCBD or CBD) was the conservation of biological diversity, their sustainable use, and fair and equitable sharing of benefits arising out of the utilization of genetic resources. The diverse landforms, water and ocean environment of the earth provides millions of species of plants and animals the necessary support for their livelihood and survival.
2. The loss of biological diversity resources as a result of negative human development in the past has generated global concern about the impact of this loss on future populations' livelihoods and survival. In this context, the world future economies and development is also seen to depend on the well being of biodiversity for survival.
3. Therefore, to assist in reversing the loss of biodiversity and the future sustainability of the earth's resources, current global commitments with regards to producing results for biodiversity have concentrated on three main areas for implementation. These include:
    - Sustainable Development
    - Ecosystems Management
    - Biodiversity Conservation
4. The Convention on Biological Diversity (CBD) was opened for signing in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil and came into force in December 1993. In ratifying the CBD in 1992, the Cook Islands Government committed itself and the Cook Islands people to the implementation of the CBD and meeting its targets.
5. The Cook Islands CBD programme was centred on the National Biodiversity Strategic Action Plan (NBSAP). The NBSAP project was probably the most influential national programme related to CBD when the national biodiversity programme started in 1996. The NBSAP was started in 1999 and completed in 2002.
6. During the drafting of the NESAF 2005-2009, the NBSAP strategies were revisited and integrated into the biodiversity component of the NESAF. The NESAF is the next five years' strategic framework for the environment sector, and although the NBSAP was completed in 2002, it is still considered valid for the next five years as most of its strategies and actions have not yet been implemented.
7. This thematic assessment of the CBD and biodiversity capacities is therefore a continuous attempt to improve the implementation of the NESAF and NBSAP by identifying capacity constraints and gaps likely to impede progress in implementing national programmes related to CBD. This will help the Cook Islands meet its commitments and obligations under the CBD.
8. Additionally, this assessment will identify priorities and needs for capacity building in the Cook Islands and link country action to the broader national environmental management and sustainable development frameworks.

b. UNCBD Requirements

The primary obligations of the UNCBD as they relate to the Cook Islands interests and central to this thematic assessment were highlighted as follows:

- The Convention calls for the Cook Islands to facilitate effective **national biodiversity planning and integration efforts**. The general provisions commit the Cook Islands to develop and implement community and national programmes related to biodiversity protection, conservation and management of identified **species and ecosystems**. In terms of mainstreaming of biodiversity, the Cook Islands are expected to put in action the **integration of biodiversity management into national and sectoral legislation, policies, plans and programmes.**

- Provisions also require the **introduction of appropriate arrangements** to ensure that environmental consequences of relevant programmes and policies are the subject of **environmental impact assessment** and that **significant adverse impacts** on biological diversity **are minimized**.
- With regards to access to financial resources and mechanisms for biodiversity, the Cook Islands, in accordance to its capabilities, is called upon to **provide funding** and or **access financial resources** provided via the financial mechanism of the Convention and/or via other donors.
- The Convention also requires for **institutional capacity building** for the effective implementation of biodiversity programmes by **strengthening or establishment,** as appropriate, **of national biological diversity secretariats or national focal points**.
- Provisions also require the Cook Islands to provide **measures for the identification and monitoring of components of biological diversity** important for its conservation and sustainable use.
- Additionally, the Convention encourages the Cook Islands to **respect and preserve knowledge, innovations and practices** of **indigenous and local communities**.
- The Cook Islands is required to **develop and introduce economically and socially sound measures** that **act as incentives** for the conservation and sustainable use of components of biological diversity.
- The Convention also commits the Cook Islands to **adopt measures** that will enhance the **recovery and rehabilitation of endangered species** as well as **promote policies and regulations** to **reduce spread of invasive and harmful species.** Provisions also outlined the importance of **management of national biodiversity resources** including protection, conservation and **providing for their sustainable use**. Similarly to *in-situ* conservation measures, the Cook Islands should also c**onsider the collection of biological resources** from natural habitats **for *ex-situ* conservation purposes**.
- In terms of biodiversity **awareness and education**, the Cook Islands is required to: **promote and encourage understanding of** the importance of, and the measures required for, **the conservation of biological diversity**; **establish and maintain programmes for scientific and technical education and training**; **establish and operate clearing-house mechanism to promote and facilitate technical and scientific co-operation.**
- The Convention also calls for **equitable sharing of benefits and access to biodiversity** by developing and introducing **measures regulating the access to genetic resources** and to **provide access for and transfer to** other Parties of technologies that are relevant to the conservation and sustainable use of biological diversity. Provisions also outlined the need for the Cook Islands to take **legislative, administrative or policy measures**, as appropriate, with the aim of **sharing in a fair and equitable way** the results of **research and development** and the **benefits arising from the commercial and other utilisation of genetic resources.** These measures include the **development, adoption and implementation** of the **National Research Foundation Act**, I**ntellectual Property Rights Act**, and **Copy Rights Act.**
- The Cook Islands is also encouraged to address provisions of the **Cartagena Protocol on Biosafety**, especially, **develop and introduce appropriate measures**, such as **Biosecurity Act** as well as **develop strategies to strengthen biosecurity and biosafety programmes**, to ensure safety regulations in handling living modified organisms resulting from biotechnology.

II. Overview of Biodiversity and UNCBD Implementation in the Cook Islands

Stakeholder consultation combined with SWOT and Gap Analysis highlighted several areas with capacity gaps. Drawing on these results of the consultations, the NCSA Stocktake report, and other national reports produced during the time of the NCSA project, Root Cause Analysis was used to further define problem areas and determine detailed capacity gaps.

Many areas identified under Biodiversity were found to be key cross-cutting environmental issues, and as such, will be analysed in the Cross Cutting Report. These include water resource management, integrated coastal zone management, waste, pollution and sanitation, and resource management. The remaining issues have been refined into six key thematic areas for further in-depth analysis, including the broad grouping of issues under Biodiversity Conservation.

The key biodiversity thematic areas identified are:

1. Biodiversity Conservation
    a. Species Management
    b. Invasive Species
    c. Ecosystems Management
    d. *Ex-situ* conservation
2. Biosafety and Biosecurity
3. Equitable Sharing of Benefits and Access to Biodiversity
4. Mainstreaming Biodiversity
5. Management of Knowledge related to Biodiversity
6. Education Awareness and Training

Gaps identified during this process as cross-cutting capacity issues that also affect Climate Change and Land Degradation, have been transferred to the Cross Cutting Report. This includes capacity gaps in education and awareness, mainstreaming of environmental management, and information management and exchange.

Thematic Area: Biodiversity Conservation

The shift in Government focus over the last 10 years from conservation to management of development has left a gaping hole in environment programmes. Biodiversity species management, monitoring, and recovery programmes, particularly for endangered, threatened or endemic species in the Cook Islands, is lacking and any activities concerning biodiversity management, conservation and protection are reactive and ad-hoc.

Species Management

- **Summary of Capacity Gap**

A comprehensive assessment of the status of wildlife in the Cook Islands, including an inventory of threatened, vulnerable or endangered species is generally not available. The cessation of many monitoring and data collection programmes for species of significance, both terrestrial and marine, has meant that there is limited knowledge of biodiversity, habitats and ecosystems available. Much of the up-to-date collection of scientific data, data which could give early indications of species decline and potential loss of biodiversity, is limited to those species that are considered of 'economic value'. The Cook Islands Biodiversity database under the Natural Heritage Trust is the only comprehensive biodiversity database however it is limited in scope to an inventory of species present in the Cook Islands and a bibliography of biodiversity literature.

Cook Islands capacity to develop and implement biodiversity conservation strategies and plans is limited by data, insufficient human resources and the lack of high level support programmes. There is limited expertise and availability of expertise to develop and implement programmes related to threatened and endangered species including promoting protection and recovery of these species.

Root Causes

- Information of Cook Island species, habitats and ecosystems, especially for those that may be threatened or endangered, is scattered, limited and does not provide a sufficient baseline
- No management criteria to determine threatened, vulnerable or endangered species, and the establishment of appropriate management regimes (e.g. captive breeding, protection of breeding areas and habitat, etc.) which are based on sound and proven scientific management principles
- Limited integration of past research/studies into biodiversity conservation activities
- Limited monitoring and case studies on local species, ecosystems and habitats
- Lack of general public involvement in systematic observation
- Limited studies by academic institutions on Cook Islands biodiversity
- Very few local experts able and available to undertake biodiversity conservation work
- Opportunities to work in species conservation and management in the Cook Islands is severely limited
- Non-governmental and community-based organisations have little capacity to carry out in conservation management activities
- Insufficient joint partnership programmes between Government, NGOs and CBOs, particularly relating to on-the-ground conservation activities which are also not within the limited resource capacities of some government agencies
- Limited capacity to develop bylaws for conservation management as a mechanism for enforcement of traditional management systems

ACTIONS:

- Develop local capacity to carryout baseline studies of biodiversity in the Cook Islands and undertake comprehensive assessment of the status of our species, habitats and ecosystems
- Develop and implement National Biodiversity Programmes to conserve all endemic flora and fauna, including rare plants used in Maori medicine, rarer varieties of Agro-biodiversity species
- Develop a programme to survey and conserve marine animals harvested for food or financial gain.
- Legislate the requirement for comprehensive assessment of the status of biodiversity in the Cook Islands [including population, distribution, coverage of flora, fauna, and ecosystems] to gather baseline information, and the periodic updating or collection of further inventories in cooperation with the Natural Heritage Trust and island Environment Authorities and councils.
- Appropriate legal and institutional measures need to be established to promote and encourage private and community-based conservancy activities such as the Ra'ui
- Utilise baseline information to develop criteria for determining status of species in the Cook Islands and develop appropriate regimes for management
- Develop and regularly update an inventory of baseline information as the basis for the sound and sustainable management of all wildlife in the Cook Islands
- Utilise the legal capacity of relevant agencies and regional/international assistance to develop appropriate biodiversity or environment management legislation through participatory approaches

- Develop and strengthen the conservation management capacity of relevant organisations to enable them to effectively carry out the mandate provided under the Environment Act 2003, the National Biodiversity Strategy and Action Plan (NBSAP) and the National Environment Strategic Action Framework (NESAF).
- Develop a National Biodiversity Programme and memorandum of understanding between Government, NGOs and CBOs to better utilise available skills and resources to manage biological resources under a prioritised programmatic approach as identified through the NESAF and NBSAP
- Strengthen the capacity of NGOs and CBOs to undertake biodiversity conservation work
- Encourage research into Cook Island biodiversity through the identification and promotion of our national biodiversity research priorities, especially for species management

Invasive Species Management

- **Summary of Capacity Gap**

A key component to managing biodiversity is to manage the threats to that biodiversity, such as invasive species. Invasives have the potential to impact many sectors of society including agriculture, marine and human health, and as custodians of our endemic and native biological resources it is of utmost importance that we take action now to reduce the threats imposed by invasive species.

While border control procedures to minimise the introduction of new invasive species are in place, the necessary resources and personnel to be fully effective at the international and national levels are lacking. Border control covers the movement of passengers and cargo via air and sea transports and in addition to this they must manage wastes and ballasts from these transports. Several initiatives have been implemented to educate and make the public aware of the risks involved in smuggling in plants from overseas undeclared however the problem continues highlighting the need to expand or alter the current education and awareness program.

The sphere of invasive species management is vast and severely under resourced (especially human and financial) and as a result some invasive species populations have grown to levels where eradication or even management is either impossible or well beyond our means therefore a concentrated effort will be needed at the national, regional and international arenas to manage where we can.

Root Causes

- Insufficient capacity for effective implementation of Quarantine legislation and activities such as monitoring and management of ports for early detection and action against invasive and potentially species,
- Current Border control staff are limited and some are unskilled or have no scientific background
- Limited capacity to identify and carry out thorough risk assessments on potentially invasive species
- Limited capacity to respond to the threats posed by invasive species, particularly to identify, control, eradicate and monitor invasive species to minimize their impacts on biodiversity resources
- Lack of policies and legislation prohibiting and preventing the movement of invasive species between islands of the Cook Islands
- Ports lack capacity to control or prevent movements of biomaterial between islands and internationally
- Limited coordination of efforts to eradicate invasive species
- Assessment of feasibility of eradication and control options for invasive species in the Cook Islands is limited as well as identified successful methods

- Communications between relevant stakeholders related to invasive species is limited
- Limited awareness of how invasive species are introduced and spread within the Cook Islands
- Lack of awareness of the potential consequences of clearing vegetation in terms of the spread of invasive species further inland where the majority of our endemic and native species reside
- Border Control and Ministry of Health has yet to initiate plans to minimise to risk of health impacts from events such as Avian Influenza or SARS - no plan of action has been prepared.

ACTIONS:

- Strengthen quarantine and border control legislation if necessary for the effective monitoring, enforcement and management of invasive species, including procedures for risk assessments
- Develop the capacity of focal points to carry out thorough risk assessment including drawing on regional expertise for in country training and resources
- Develop a system for undertaking risk assessment including terms of reference and criteria
- Strengthen links to the Pacific Invasive Learning Network (PILN) and Regional Invasive Species Programme
- Undertake a multi-sectoral review, in partnership with the private stakeholders, of the control of transboundary and inter-island movement of terrestrial and marine flora and fauna with a view to developing legislation and strengthening the capacity of ports and focal points to implement.
- Develop a programme involving all islands to survey invasive species in natural ecosystems and the agro-ecosystem, and to display this information on a GIS platform
- Develop the GIS capabilities of relevant stakeholders to produce spatial information for modelling and analysis of biodiversity and invasive species data
- Determine the feasibility of and priorities for eradication and control of invasive species
- Conduct trials/pilot projects to determine effective locally appropriate measures to eradicate or control invasive species
- Develop a strategic implementation plan between all relevant stakeholders to coordinate efforts to manage invasive species
- Develop a national programme for invasive species based on pilot projects and feasibility studies for the eradication and control of invasive species in both natural and human-modified ecosystems
- Develop community-based programme to eradicate those invasive weeds and animal pests that are not yet widespread on particular islands
- Strengthen the capacity of focal points, NGO's and communities to implement and monitor programmes including through ongoing training, resources and data management
- More stringent internal quarantine control measures need to be developed and implemented to protect the outer islands, particularly from invasive species that have not yet spread to these islands
- Develop media and communications strategies for greater exposure and awareness of invasive species issues to local communities and the risks of all invasive species be it plants, insects, diseases, viruses etc to the outer islands
- Provide better training programmes for all stakeholders to reduce spreading of invasive species e.g. cleaning of farm equipment

Ecosystems Management

- **Summary of Capacity Gap**

Human activities are having a major impact on ecosystems in the Cook Islands including changes in ecosystem structures and increasing degradation of resources. Encroachment and habitat loss is occurring on a regular and progressive basis in identified sensitive areas and highlights the insufficient measures in place to protect important terrestrial, reef and lagoon ecosystems.

Past approaches to the development and management of ecosystems or protected areas have been fragmented and reactive. Mechanisms such as Ra'ui of lagoon or inshore resources have been applied to a few areas however management, monitoring and enforcement of these areas have been weak. Questions have also been raised as to the effectiveness of such mechanisms given the limited overall goals of these protected areas.

Although the establishment of a national system of protected areas has previously been recommended for consideration, a major gap continues to be that important or threatened ecosystems, sensitive areas, and biodiversity resources have not been clearly identified for conservation and that resources and technical capacity for ecosystems management are limited. The absence of legislation to support and govern the management of ecosystems, protected areas and biodiversity resources is a concern. Regulations under the Environment Act 2003 for Suwarrow National Park and Biodiversity Conservation are in the draft stage however more comprehensive legislation may be required.

Root Causes

- Insufficient legislation for the conservation and protection of important ecosystems, protected areas, parks and habitats, including mandates for management plans before biologically unique areas are compromised
- Capacity and resources to classify, map, and prioritise ecosystems and sensitive areas for conservation is very limited, including technical capacity in the identification of ecosystems and all their component processes such as trophic levels/food web, species interactions and habitats
- Lack of on-going local and national ecosystem identification, monitoring and management programmes under NES or any agencies mandate
- Lack of spatial information on ecosystems and capacity to create and analyse that spatial information e.g. GIS and biostatistics
- Inadequate safeguards to ensure that research and TA reports which would contribute to the identification of important or threatened ecosystems and sensitive areas and biodiversity resources are submitted to government and national library or database
- Legal structure for the designation, declaration, conservation and management of national parks and protected areas has not been articulated
- Limited capability to develop regulations related to protected natural areas (PNA) or adjacent areas
- Criteria for the designation of sites of ecological significance is not established
- No programme to establish a national system of protected areas, including community-based, to protect important terrestrial and marine ecosystems.
- Limited local and technical expertise to establish PNA and monitor their effectiveness, including capacity to identify priorities, criteria, processes and procedures for selecting, designating, establishing and developing protected areas
- Data and information related to ecosystems and protected areas is scattered amongst stakeholders
- Limited development and implementation of management guidelines for all types of protected areas, important ecosystems, and sensitive areas based on sound and proven scientific management principles

- Lack of appropriate techniques and guidelines for reviewing and monitoring protected areas
- Insufficient resources, including technical expertise and funding, for ongoing implementation of protected areas
- Limited capacity to engage stakeholders to develop and implement participatory conservation and management plans, including NGO and community based protected areas for important ecosystems and habitats
- Limited awareness or outreach activities to inform communities and other stakeholders on the benefits and importance of protected areas.
- Lack of an independent National Parks and Protected Areas Authority to administer the Cook Islands' national parks and protected areas on behalf of all the major stakeholders
- Lack of management group with the responsibility to conserve Suwarrow wildlife.
- Limited capacity to support the management of Ra'ui areas
- Lack of assessment of effectiveness of Ra'ui areas

ACTIONS:

- Biodiversity Conservation Regulations need consultation and further consideration to be made for specific species, habitats and ecosystems that are under threat
- Address through engaging relevant personnel for implementation programmes on biodiversity and ecosystems management
- Incorporate important or threatened ecosystems, sensitive areas, and biodiversity resources in a holistic approach to conservation through a national biodiversity programme with clearly prioritised and identified areas and objectives.
- Develop technical expertise in the identification of ecosystems and all their component processes, including through training, short courses and practical application.
- Develop technical capacity to create and analyse spatial information through data collection, analysis and GIS applications.
- Develop and implement management guidelines for all types of protected areas, important ecosystems, and sensitive areas based on sound and proven scientific management principles, including ongoing monitoring and review.
- Develop management plans for identified ecosystems based on established criteria, and ongoing monitoring programmes
- Identify mechanisms to ensure research and technical assistance reports for ecosystems related work are readily available, such as incorporation into and enforcement of Research Approval Committee policy or MOUs
- Develop and utilise a legal requirement to undertake inventories, centralise information in a database, and update the information in a systematic way under a National Biodiversity Programme
- Build the capacity and strengthen the roles of NGOs and local communities to promote and implement ecosystem management activities, including through awareness raising, provision of resources and training
- Promote mechanisms such as the Environment Act 2003 to protect strategically important areas or ecosystems and amongst these are watersheds, areas designated as national parks and reserves and, areas prone-to erosion, drought and flood events
- Conduct awareness activities, including participatory workshops on conservation regulations, for all relevant stakeholders within or adjacent to key ecosystems and habitats to develop long term local support and commitment to compliance
- Conserve important ecosystems through a system of protected areas with regulated and monitored activities
- Review, consider and consult on appropriate legislations for land use and zoning
- Draw on local and regional expertise to establish criteria based on sound and proven scientific principles for selecting, designating, establishing and developing protected areas for sites of ecological significance.

- Work with communities and NGO's to clearly define appropriate mechanisms for the management, access, use and ownership of protected areas, including Suwarrow
- Promulgate the Suwarrow National Park Regulations and establish an independent National Parks and Protected Areas Authority to administer the Cook Islands' national parks and protected areas on behalf of all the major stakeholders
- Develop a programme to select areas to establish a national system of community-based protected areas to protect important marine and terrestrial ecosystems.
- Use international legal designations (such as Ramsar and World Heritage) to leverage technical and financial support for island protected areas
- Develop and implement community management plans for a national system of protected areas to protect important terrestrial and marine ecosystems with regulated and monitored activities.
- Raise awareness of funding opportunities for community based activities e.g. SGP, to facilitate access to these resources
- Consider the development of a legal framework for establishing and enforcing Ra'ui and protected areas to support the management of protected areas
- Develop capacity for monitoring, control, and surveillance to implement the legal framework for Ra'ui, including through training
- Improve scientific understanding on the effectiveness of Ra'ui areas and impacts on effectiveness to improve management of Ra'ui protected areas
- Consider financial incentives and mechanisms to fund monitoring and enforcement education and awareness for the Ra'ui such as licensing, user pays fees, fines.

***Ex situ* Conservation**

- **Summary of Capacity Gap**

Ex-situ activities for conservation of important crop species is well developed under the Ministry of Agriculture utilising regional facilities and expertise, however it is the *ex-situ* conservation of other native, endemic and medicinal species that is lacking. Policies and management plans to conserve these species *ex-situ* are lacking and there is limited knowledge and understanding of the importance of, and potential for *ex-situ* conservation. In–country ex-situ conservation is currently not feasible, given the lack of appropriate facilities and scientific capacity to establish, protect and maintain gene banks/genetic resources centres and the costs associated with set up and operation. Aquaculture facilities have recently been established as a pilot project on Rarotonga for some fish species however the long term outcomes of this project will need to be monitored for the success of such operations in the Cook Islands.

Root Causes

- Policies for Plant Genetic Resources need to be developed or improved upon
- Lack of facilities to regulate and maintain biodiversity *ex-situ* due to high costs associated with establishing ex-situ facilities
- Lack of baseline information for species with *ex-situ* conservation importance and potential
- Limited opportunities and research capabilities and laboratories/research facilities.
- Limited local expertise to undertake *ex-situ* conservation work for native, endemic and other locally significant species
- Weak processes of registering and sharing results of both local and international research
- Potential ethical and cultural implications of *ex-situ* conservation, particularly those utilising regional facilities e.g. for vai rakau Maori
- Lack of understanding of good *ex-situ* practises and how the community and NGOs can get involved e.g. botanical gardens

ACTIONS:

- Utilize other regional agencies to preserve important native, endangered and medicinal species *ex-situ* and develop MOU for *ex-situ* conservation including ownership of Cook Islands species that prohibits distribution without prior informed consent from the Cook Islands
- Utilise baseline information from national biodiversity programmes to investigate species of importance for *ex-situ* conservation including feasibility studies
- Strengthen the capacity of focal points to develop a registration system for all research in the Cook Islands and enforce provisions for documentation and information sharing
- Undertake risk assessments and extensive consultations with scientific and local communities to raise awareness of *ex-situ* conservation issues prior to using this methodology
- Develop and raise awareness of guidelines for locally appropriate *ex-situ* practises that the community and NGOs can get involved in e.g. botanical gardens

Thematic Area: Biosafety and Biosecurity

Biosafety and biosecurity in the Cook Islands is limited by resources, technical capacity and inadequate monitoring and enforcement measures. An enabling environment for effective biosafety and biosecurity is lacking. There are no specific policies, procedures or legislation in place to accommodate biosafety, including the trans-movement and safe handling of LMO's and GMO's. Such organisms are not currently covered under the Cook Islands quarantine legislation however a Biosafety Policy Framework has been drafted but needs further development before it can be finalised. A Draft Biosecurity Bill is also awaiting formal completion however further capacity development will be necessary to ensure effective implementation of both. Basic monitoring procedures are in place for biosafety at Customs and Quarantine but enforcement procedures are relaxed and require review. The capacity for the safe management of LMO's and GMO's is very limited. Current facilities for the storage of hazardous goods are inadequate, posing both a security and human health risk. A more coordinated approach is required to ensure that Ministries and Agencies have access to information and resources that will allow them to develop their own biosafety and biosecurity procedures as required.

Root Causes

- Lack of strategic direction at the policy level for biosafety and biosecurity
- Biosecurity legislation is still in draft form and has not yet been promulgated
- Current capacity within Quarantine Division for biosafety and biosecurity, including implementation of the Biosecurity Bill and biosafety activities is insufficient due to limited staff members, some with no background in biosecurity or science at all.
- Limited numbers of researchers, scientists, monitoring and compliance expertise with skills related to biosafety available locally although there are several specialist in areas such as aquaculture, forestry , economics, soil and policy
- No scientific research or development program being undertaken in the Cook Islands directly related to biosafety
- Lack of facilities e.g. laboratories, for the safe handling of LMO's, GMO's and hazardous goods
- Lack of technical capacity and the specialized equipment to undertake any biosafety programmes
- Reliance on regional expertise and facilities to carry out any biosafety work
- Insufficient awareness and information on biosafety and biosecurity issues
- Little coordination between Government and the private sector over the importation of potential LMO's or GMO related matter

- Lack of legal and institutional framework to implement the requirements of the Cartagena Protocol on Biosafety to which the Cook Islands is a signatory.

ACTIONS:

- Complete formalisation of both the Biosecurity Act and Biosafety Policy Framework to guide future programmes
- Develop comprehensive biosafety legislation to control and regulate the importation, experimentation or use of genetically modified organisms (GMOs).
- Ensure that issues relating to biosafety and biosecurity are included in the National Strategic Plan by Government
- Impose rigorous biosafety and biosecurity restrictions to protect human life, health, and the integrity of natural flora and fauna and ecosystems
- Develop policies and procedures to facilitate monitoring and compliance as well as trans-movements, storage and safety handling of LMOs and GMOs.
- Develop the capacity of focal points to carry out thorough risk assessment for biosafety and biosecurity, including by drawing on regional expertise for in country training and resources.
- Develop an risk management regime and establish a permitting process for the importation and use, or the conducting of experiments with LMOs and GMOs,
- Ensure that the handling of dangerous goods and materials were within the required minimum biosafety standards
- Build up of basic scientific and technical expertise in biosafety and biosecurity within identified key stakeholders including the provision of country training and resource allocations to address border control, monitoring and compliance, safety trans-movements storage and handling of LMOs and GMOs and biosecurity quarantine.
- Initiate a public awareness education campaign designed for both the private and public sectors informing them of the importance of biosafety and biosecurity issues and its impacts on the future of Cook Islands society
- Improve coordination of information, resources and knowledge of biosafety and biosecurity issues across related sectors that will impact on research, economic, security and handling procedures
- Encourage Ministries to include biosafety issues and resources to their annual budget processes
- Undertake a multi-sectoral review of the control of transboundary and inter-island movement of terrestrial and marine flora and fauna and of Living Modified organisms (LMOs) and Genetically Modified Organisms (GMOs) with a view to establishing an independent Biosafety or Biosecurity Agency.
- Develop a database of LMOs released for commercial purposes to compare with the things imported into the Cook Islands. These should include things like micro-organisms, food additives, food, animals and crop that have been genetically modified.
- Develop communication strategy for raising public awareness and sharing of information between stakeholders
- Develop a HRD programme for staff development within relevant Ministries to ensure sufficient technical capacity for the implementation of biosafety and biosecurity activities

Thematic Area: Equitable Sharing of Benefits and Access to Biodiversity

The concept of Access and Benefit Sharing (ABS) is relatively new to the Cook Islands however it is an issue of some importance given the close and traditional dependence of our people on local biological resources. Also, past research activities that accessed biological resources were approved with little consideration given to ensuring the benefits arising out of that access were shared equitably.

A major capacity gap is the lack of understanding and awareness of decision makers, such as the National Research Committee, of Access and Benefit Sharing (ABS) issues and why it is important for the Cook Islands to establish an effective enabling environment to manage ABS activities. Currently, there are no suitable arrangements for the effective management of ABS in the Cook Islands including lack of legislation, policies, institutional structures and management systems such as a system of prior informed consent. Little is known about research activities that access biological resources after they have received their research approval and there is limited capacity to monitor these activities in country. There is no means of enforcement of the requirements of the approval permit, especially once the researchers have left the country. Overall there is a general lack of capacity for the implementation of Access and Benefit Sharing in the Cook Islands.

Root Causes

- No agency is mandated to coordinate and manage Access and Benefit Sharing in the Cook Islands
- No policies or legislation specifically related to ABS
- No permitting authority for ABS activities except for research activities that access biological resources
- Limited capacity to carry out thorough risk assessments
- Lack of requirement to undertake risk assessment procedures for research and access activities
- Limited ability to determine risks of unfamiliar research methods, especially with newly developed methodologies
- Lack of capacity for negotiation and mediation required for ABS agreements
- Limited technical personnel able to act as supervisors and inspectors of ABS activities
- Lack of education awareness programme for ABS
- Lack of database to manage information related to ABS research or activities
- Lack of clearing house mechanism for ABS and biodiversity information

ACTIONS:

- Mandate through legislation the Biodiversity Conservation Unit (BCU) within the National Environment Service to coordinate and manage Access and Benefit Sharing activities
- Giving consideration to the National Research Policy, develop legislation to manage all activities related to Access and Benefit Sharing of Cook Islands biological resources (including traditional knowledge, practises and innovations) and to ensure the equitable sharing of benefits that arise from this access
- Legislate the requirement for risk assessment procedures to be carried out before proposed activities, research or methodologies with the potential to significantly impact our environment can be considered
- Expand the mandate of the National Research Committee to serve as the permitting authority for ABS activities in the Cook Islands
- Build effective capacity in-country to coordinate and manage ABS activities, including through specific trainings on ABS issues, communication, mediation, negotiations, legal contracts, education awareness and media.
- Develop mechanisms to foster working partnerships between the National Research Manager and the BCD for the coordination of applications and negotiations for ABS research.

- Strengthen the capacity of the National Research Committee to develop an effective and aware permitting authority, through trainings and education awareness of ABS issues and how they relate to the Cook Islands
- Develop a system for undertaking risk assessment including terms of reference and criteria for approval
- Develop the capacity of focal points to facilitate risk assessment procedures including drawing on NES Operations Division for support and advice
- Develop a mechanism for accessing scientific knowledge including links to regional organisations and academic institutions
- Strengthen the role of communities and resource owners to enable them to fully participate in the negotiations process of ABS agreements for equitable sharing of benefits, including through training in negotiations, mediation, interpretation and drafting of legal contracts
- Identify and train appropriate nationals as fully qualified negotiators and mediators
- Establish a 'Roster of Local Experts' and develop a mechanism to enable them to act as supervisors for ABS research and access activities
- Build the capacity of ABS supervisors and inspectors through trainings and practical learning for monitoring and policing
- Develop a communications strategy and education awareness programme, especially targeting decision makers and resource providers with the aim to fostering a public fully informed on ABS issues
- Develop locally appropriate informational materials in English and Maori including simplified guidelines to the application process and handbooks for public education purposes
- Develop a National Registry of Applications and Contracts database for ABS and link with the planned national registry of research and Cook Islands Research website

Thematic Area: Mainstreaming of Biodiversity

At the national level, policy frameworks to support implementation of biodiversity activities, including the National Biodiversity Strategy and Action Plan (NBSAP), are weak. To date, local implementation of the NBSAP has been slow and mainly been limited to externally funded enabling activities under the Convention on Biological Diversity (UNCBD). Biodiversity issues are not treated as priority for government and are easily subjugated by other environmental management interests such as waste and pollution.

The lack of integration of biodiversity priorities into national economic and development planning and budgetary processes means that there is a constant struggle for recognition and support, and limited consideration of biodiversity issues in national decision-making. In particular, the lack of a National Biodiversity Programme for coordinated implementation of the NBSAP and other biodiversity initiatives is a significant gap and means that current activities are prepared on an ad-hoc basis and dependant on annual budgetary support, external funding or individual scientific interests. Institutional structures, facilities and local technical capacity to undertake biodiversity activities are also inadequately developed. Systematic communication amongst key stakeholders in some sectors for cooperation and coordination between agencies and to minimize overlap of responsibilities remains poor.

Root Causes

- Lack of high level decision to formalise the National Biodiversity Programme and consolidate all national biodiversity related programmes

- Current legislation does not adequately cover biodiversity considerations especially for emerging biodiversity issues such as biosafety and ABS
- Insufficient funding and commitment from Government to implement the NBSAP and other biodiversity strategies
- Dependency on GEF project funding and other project based programmes to drive biodiversity programmes in-country
- Limited capacity for policy development and policy analysis to support the strengthening of policy frameworks for biodiversity
- Allocation of human and financial resources to biodiversity issues and the coordination of activities between agencies is inadequate
- Limited capacity to integrate biodiversity considerations into economic development activities related to the utilisation of biodiversity
- No agency with clear mandate to drive the implementation of the NBSAP and other biodiversity initiatives
- No clear definition of roles and responsibilities of agencies involved in biodiversity related fields to minimize overlap and duplication of efforts, and aid coordination
- Contradictory interests between key developmental and regulatory agencies (MOA, MMR, NES, NHT) in terms of conservation, protection, utilisation and economic development of biodiversity.
- Outer Islands community leaders lack capacity to develop their own resource management regulations and by-laws where required
- Detailed implementation plan and actual activities for NBSAP not completed
- Limited effectiveness in coordination of responsibilities and of programmes
- There is no assessment of the effectiveness of the mainstreaming of biodiversity into these organisations
- New biodiversity issues are not easily understood regarding the implications at the national level

ACTIONS:

- Develop a National Biodiversity Programme and establish a coordinating body or unit to drive its implementation
- Ensure that the mandate of the coordinating body or unit for the National Biodiversity Programme includes the capacity to direct and commission inventories [population, distribution, coverage] of flora, fauna, and ecosystems in cooperation with the Natural Heritage Trust and outer island Environment Authorities.
- Develop, identify and engage relevant legal and planning personnel to improve the quality and effectiveness of legislations and CBD-specific regulations policy and action plans development.
- Integrate biodiversity priorities into national economic, development and budgetary planning processes - identify areas where capacity can be developed and design an implementation programme to address this.
- Provide trainings or regular briefings as necessary for key law and policy makers on national biodiversity issues and the implications for the Cook Islands
- Strengthen local capacity for policy development and analysis to support the development of policy frameworks specifically for biodiversity and ensure that biodiversity considerations are incorporated into relevant policies
- Establish a multi-sectoral working group to review policies and activities of Government ministries and agencies to ensure that they are consistent with a shared responsibility to maintain Cook Islands biodiversity and related knowledge.
- Strengthen the roles of the appropriate Government Ministries and Agencies, NGOs and CBOs in implementing biodiversity programmes through active participation (to promote ownership) and capacity building initiatives

- Establish a biodiversity trust fund to support the wide range of activities required to conserve Cook Islands biodiversity in an integrated and equitable manner
- Develop mechanisms for increased coordination of the activities between agencies in the conservation and sustainable use of biodiversity resources
- Enhance and strengthen the role and responsibilities of key national policy decision-making bodies such as Cook Islands Research Foundation or National Sustainable Development Taskforce as they relate to providing guidance on sustainable development policy decisions

Thematic Area: Management of Knowledge Related to Biodiversity

Deficiencies in biodiversity related information management, including documentation of traditional knowledge and practises related to customary use of biological resources, are a concern as biodiversity information and data is necessary to aid informed decision making. In general, scientific knowledge and information for biodiversity is scattered and poorly managed within different agencies and organisations. Currently, the Cook Islands Biodiversity database under the Natural Heritage Trust is the only comprehensive biodiversity database however it is limited in scope to an inventory of species present in the Cook Islands and a bibliography of biodiversity literature. Local capacity for scientific collection of biodiversity data, including for research, is limited as well as capacity for data analysis.

Poor management of traditional knowledge and practises (TKP) related to customary use of biological resources in the Cook Islands is a major gap. Understanding of TKP in the Cook Islands is usually limited to local practitioners such as ta'unga (traditional healers), many of whom are reluctant to share their knowledge of biodiversity species used in traditional medicine due to fear of misuse and abuse by others, including foreigners. Oral history and records have been traditionally relied on to preserve knowledge however this can lead to loss of valuable information if this knowledge is not passed on. Programmes or attempts to record traditional knowledge have been inconsistent and ad hoc. Limited attempts have been made to capture traditional knowledge and practises from outer islands – each island can have different and locally specific traditional knowledge and practises based on the biological resources of that island. The Cook Islands also has poor policies and legislative frameworks in place to protect traditional knowledge and practises and the rights of the holders of such knowledge, as well as to prevent bio-piracy.

Root Causes

- No programmatic approach to initialize and guide the scientific collection of biodiversity data and knowledge
- No centralised Clearing House Mechanism or integrated biodiversity information system of past, current and on-going activities and research for stakeholders awareness and promoting linkages
- Lack of clear mandate and defined responsibilities for institutions to strengthen local and national biodiversity data collation and management capacities
- Consideration of biodiversity issues and understanding of the application of the precautionary principle in decision making is either limited or lacking in key agencies
- Maori names of biological resources especially for traditional practises are not always documented
- Limited guidelines on applications of traditional use and customary practices of biodiversity including the Ra'ui
- Lack of coordination body to oversee facilitation and monitoring of TKP related programmes and activities including rights of knowledge holders in Access and Benefit Sharing (ABS)

ACTIONS:

- Develop other key biodiversity databases while continuing to support the Natural Heritage Trust Database programme
- Maintain and periodically update the NHT database bibliography including establishing links to the National Research Registry
- Expand scope of NHT database to include more biodiversity information including population distribution of species, ecosystems and biodiversity resources.
- Develop and maintain an integrated biodiversity information system to incorporate all biodiversity information into a central comprehensive framework, including through support, resources and training of appropriate personnel as part of a national biodiversity programme
- Identify repository responsible to manage core environment data and the integrated biodiversity information system
- Develop technical capacity to undertake scientific collection of biodiversity data, including for surveying and monitoring of biodiversity, through training, short courses and practical application
- Ensure that the collection of biodiversity data is included in national biodiversity programme
- Within the host institution of Biodiversity, develop and maintain a CHM of past, current and on-going activities and research supported through the process of National Reports.
- Identify agencies or bodies with a clear role and function to record traditional knowledge and practises related to biological resources, and develop and implement consistent, systematic, ongoing recording programmes including developing appropriate technical capacity to undertake recording
- Ensure that programmes capture all island specific traditional knowledge and practises related to their biological resources

Thematic Profile

Climate Change and the UNFCCC in the Cook Islands

I. Introduction to Climate Change programmes and capacities

a. Background

1. The United Nations Framework Convention on Climate Change (UNFCCC) objective is to achieve the stabilisation of greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous human interference with the global climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.
2. The increasing intensity and frequency of extreme climate events such as sea level rise, severe droughts and cyclones has affected many countries and communities worldwide.
3. These adverse effects of climate change have prompted countries to invest in vulnerability and adaptation programmes, the transformation of markets towards cleaner and low GHG-emitting technologies, and to look at ways of lowering fossil fuel consumption or increasing use of renewable energy sources.
4. Therefore, to assist in reducing the effects and impacts of climate change, countries have committed funding via financial mechanisms such as the GEF to support climate change-related initiatives which are focussing on the following areas:
    - Greenhouse gases inventories
    - Vulnerability to the adverse effects of climate change
    - Adaptation to the impacts of climate change
    - Renewable energy and energy efficiency (Mitigation)
5. The United Nations Framework Convention on Climate Change (UNFCCC) was adopted by the United Nations in May 1992 and came into force in March 1994. The Cook Islands signed the UNFCCC in June 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil and ratified it in April 1993.
6. The Cook Islands UNFCCC programmes were initiated through several regional and sub-regional projects which address climate change adaptation initiatives, capacity building, impact assessments, hazards and risk management as well as introducing mitigation measures. The programmes include the PICCAP, AIACC, CBDAMPIC, CLIMAP and PIREP.
7. The Cook Islands has already experienced severe climate events having had to cope with five strong cyclones over a one month period in 2005. This increased frequency and intensity of cyclones is one of the risks associated with the Cook Islands, its small islands and fragile coastal ecosystems.
8. This thematic assessment of the Climate Change and UNFCCC related capacities is therefore a continuous attempt to improve the implementation of the NESAF by identifying capacity constraints and gaps likely to impede progress in implementing national programmes related to climate change. This will help the Cook Islands meet its commitments and obligations under the UNFCCC. Additionally, this assessment will identify priorities and needs for capacity building in the Cook Islands and link country action to the broader national environmental management and sustainable development frameworks.

b. UNFCCC Requirements

The primary obligations of the UNFCCC as they relate to the Cook Islands interests and central to this thematic assessment were highlighted as follows:

- The Cook Islands is required to strengthen or establish, as appropriate, its national climate change secretariats or national focal points (**national institutions**) to carry out climate change duties including reporting requirements such as the **national communications.**

- The Convention also requires for the enhancement and/or creation of an enabling environment for effective national climate change programmes, in particular: **integration of climate change adaptation and mitigation considerations into national planning, policies and actions** to address unacceptable risks to the natural environment and economy, including those arising from natural hazards such as extreme weather events, climate variability, climate change and sea level rise.
- With regards **to vulnerability and adaptation assessment**, the Cook Islands is expected to conduct the following assessments: **national hazards risk assessment**; **island specific vulnerability and adaptation assessments**; and **research and systematic observation, including meteorological, hydrological and climatological services**.
- The Cook Islands is fully supportive of the **capacity-building efforts for implementation of adaptation measures** to meet the **specific needs and concerns arising out of Article 4.8 of the Convention**.
- In terms of **assessments for implementation of mitigation options**, the Cook Islands will be required to: facilitate the gradual **integration of renewable energy systems into national energy generation capacities**; **develop greenhouse gas (GHG) inventories, emission database management, and systems for collecting, managing and utilizing activity data and emission factors**; and for establishment of **clean development mechanisms.**
- The Convention also provides for the Cook Islands to take steps to **improved decision-makings with the widest possible participation by the communities** including participation in international negotiations.
- Measures outlined in the provisions for education, training and public awareness, commits the Cook Islands to **develop and implement education, training and public awareness programmes and ensure access to information, wider participation and exchanges of materials** on climate change and its effects.
- Additionally, the Convention encourages the Cook Islands on the spread and **exchange of information and promotion of networking**, including the **establishment of databases**, establishment **of inventories** of all past, present and planned climate change programmes and activities in the Cook Islands, and sourcing, **availability, development and transfer of technology.**

II. Overview of Climate Change, UNFCCC, Kyoto Protocol and Montreal Protocol Implementation in the Cook Islands

Stakeholder consultation combined with SWOT and Gap Analysis highlighted several areas with capacity gaps. Drawing on these results of the consultations, the NCSA Stocktake report, and other national reports produced during the NCSA project, Root Cause Analysis was used to further define priority problem areas and determine detailed capacity gaps.

Many areas identified under Climate Change were found to be key cross-cutting environmental issues, and as such, will be analysed in the Cross Cutting Report. These include water resource management, integrated coastal zone management, waste, pollution and sanitation, and resource management. The remaining issues have been refined into seven key thematic areas for further in-depth analysis, including the broad grouping of issues under Adaptation and Mitigation.

Issues relating to the phase out of ozone depleting substances (ODS) under the Montreal Protocol have been included under Climate Change as a way to encapsulate activities related to the protection of the atmosphere.

The key climate change thematic areas identified are:

1. Adaptation
    a. Adaptation to Climate Change
    b. Vulnerability and Adaptation
    c. Research and Systematic Observation – climate, hydrological, meteorological
    d. Disaster Preparedness and National Hazard Risk Assessment
2. Mitigation
    a. Green House Gases
    b. Renewable Energy and Energy Efficiency
    c. Clean Development Mechanisms
3. Integrating and Institutionalising Climate Change
4. Information Management and Exchange
5. Education Training and Awareness
6. Technology Transfer
7. Protection of the Atmosphere – Phase out of Ozone Depleting Substances

Gaps identified during this process as cross-cutting capacity issues that also affect Biodiversity and Land Degradation, including gaps in education and awareness, mainstreaming of environmental management, and information management and exchange, have also been transferred to the Cross Cutting Report.

Thematic Area: Adaptation

Adaptation to Climate Change

- **Summary of Capacity Gap**

Adaptation is recognized as the national priority for climate change in the Cook Islands given the vulnerability of our small islands to the impacts of climate change, including extreme events and sea level rise. Our vulnerability gives us little option but to adapt and reinforces the need for comprehensive climate change adaptation plans and programmes. Recognising that elements of a National Adaptation Plan of Action (NAPA) have been captured under priority actions for adaptation and climate change in the National Environment Strategic Action Framework (NESAF),

it is still important to expand this information within an appropriate framework to fully articulate priorities and project profiles and provide government with the direction for provisions to be made in annual government budgets to undertake adaptation and preventative measures.

Achieving adaptation to climate change on the ground can also be quite complex due to difficulties in delineating between climate change and climate variability, the limited awareness of the need to adapt, and the high cost of adaptation or climate proofing. Climate proofing is not usual business practise and there is general reluctance to take on this added burden and cost. The lack of incentive measures to encourage adaptation is a barrier especially as majority of goods and services such as adaptation technologies are imported, and may not be cost effective or economically viable. While it is essential for small island states such as the Cook Islands to adapt, it is also important to note that it is the moral obligation of major greenhouse gas emitting countries to fund adaptation.

Root Causes

- Research into and understanding of the long term benefits of climate proofing is limited
- Lack of local case studies demonstrating effective adaptation
- Lack of a National Adaptation Plan of Action, and current plans and strategies do not fully identify means for action, priorities and project profiles to mobilize resources and strengthen adaptation implementation in the Cook Islands
- No incentive measures have been developed to encourage or aid adaptation and there is a lack of national policy and legislation to support the development of incentives to guide implementation of adaptation measures
- Limited research and support into the development of local resources as adaptation options
- Limited capacity to undertake cost-benefit analysis of different adaptation options
- Difficulties drafting proposals and accessing funding for adaptation priorities

ACTIONS:

- Undertake targeted awareness programmes highlighting the impacts of climate change and use case studies to reinforce the need to take actions for adaptation and mitigation, even without complete scientific certainty.
- Promote research on the development of local resources as adaptation options and long term benefits of climate proofing
- Expand upon available information on adaptation, particularly within the NESAF, to fully articulate priorities and project profiles within an appropriate framework
- Establish a national coordinating body for climate change and gather Government support to drive the development of policies, legislation and incentives for adaptation under a national programme for climate change
- Integrate climate change adaptation into national, NGO, civil society and private sector policies, programmes, and initiatives using appropriate tools, (for example use of EIAs, cost benefit analysis, vulnerability assessments)
- Strengthen synergies between agencies and organisations especially for risk management including communications mechanisms, for resource, information and expertise sharing and to prevent duplication of efforts
- Develop and strengthen local capacity for project proposal development, writing and reporting to increase local ability to access funding for adaptation priorities

Vulnerability and Adaptation Assessment and Implementation

- **Summary of Capacity Gap**

Vulnerability and Adaptation assessment (V&A) is a vital analysis and decision-making tool for determining key vulnerabilities together with priority and long term adaptation options. The Cook Islands however, have limited capacity and resources to undertake V&A's for each individual island and their communities. Complexities in the IPCC process for vulnerability and adaptation assessments used in identification, analysis and prioritisation of adaptation options are also an issue. In addition, limited availability of relevant data to support V&A's due to the fragmented nature of some data and data gaps is a key capacity constraint. Data is also usually only collected as a result of donor funded projects which means that it is very much oriented to project objectives and only collected for the duration of the project. Funding is a big issue for conducting V&A's in the Outer Islands. Given the limited local capacity and established baseline data for each island, there are high costs associated with deploying necessary technical capacity and resources.

Root Causes

- Limited local technical and human capacity to conduct Vulnerability and Adaptation (V&A) assessments
- Lack of locally appropriate tools and methodologies for undertaking V&A in the Cook Islands
- Lack of capacity to apply tools and methodologies for climate change such as models and scenarios
- Lack of support for continuous mechanism to properly collect, database, maintain and map environmental, socio-economic and cultural data including traditional knowledge and practises
- Limited funds to conduct vulnerability and assessment surveys and trainings
- Transaction costs of delivering V&A programme in the outer islands is high
- Limited assessment of vulnerability and adaptation in health, tourism, food security, disaster management, infrastructure and other sectors in the Cook Islands context

ACTIONS:

- Develop local technical and human capacity to carry out Vulnerability and Adaptation assessments, particularly at the community level
- Promote and design initiatives that can combine government and donor support for systematic information/data management to ensure sustainability
- Push for the need for development of SIDS specific tools and methodologies at the International and Convention level, drawing on local and traditional knowledge and apply methodologies through 'hands-on training' at the national level
- Tools and Methodologies for Vulnerability and Adaptation need to address specific sectoral issues within the context of adapting to Climate Change
- Utilise regional and international expertise and/or training programmes to train or up skill personnel on islands as well as in sectors on Vulnerability and Adaptation Assessment. Some of the identified needs include, beach profiling; upskilling and development of investigation guidelines for public health inspectors; environmental health education; water testing; data analysis and processing; community based Vulnerability and Adaptation assessment, and cost benefit analysis of adaptation options.
- Develop and strengthen mechanisms for data sharing within and between agencies, such as the Pacific Environmental Information Network (PEIN), and promote the need for web-based accessibility of data

Research and systematic observation (meteorological, hydrological and climatological**)**

- **Summary of Capacity Gap**

Climate change research and systematic observation is important for the Cook Islands in order to monitor and assess impacts of climate change and as data to support decision making. However, there is a very limited continuous research and systematic observation for monitoring of climate change carried out in the Cook Islands. This is partly due to the limited technical and human capacity to carry out continuous research and systematic observation for monitoring of climate change and limited funding and high level support for these programmes. Research into the meteorological, hydrological and climatological areas is weak and not promoted at all and current research and technical support from international and intergovernmental institutions is ad hoc. Capacity to analyse data for climate change implications is limited and complicated by uncertainties of current climate change models and scenarios. Deficiencies in the current climate and hydrology monitoring network include unreliable automated weather stations due to telecommunication issues and lack of funding for ongoing maintenance and upgrade of systems.

Root Causes

- Lack of clear policies at the national level to support the implementation of and budgeting for continuous research and systematic observation
- Lack of support for skilled local researchers and technical support to aid monitoring programmes of national priority e.g. coral monitoring and water quality
- Lack of National Research Programme, Policy and Strategic Framework to lead national efforts in technical and research developments
- Limited availability and accessibility of data from climate related sectors to assist with research and systematic observations
- Data gaps and discontinuous records make modelling and analysis complicated
- Lack of access to suitable research facilities, including laboratories and equipment
- Not all inhabited islands have observation systems
- Limited technical, human and financial resources, particularly at the Meteorology Service, to carry out ongoing and continuous research and observation programmes for climate change
- Lack of financial and technical support related to the maintenance and upgrading of outer island weather stations
- Scales of current climate models and scenarios are too broad to accurately predict changes at our island level

ACTIONS:

- Develop clear policies at the national level to support the implementation of and budgeting for consistent and continuous research and systematic observation (such as coral monitoring and beach profiling) for monitoring purposes and to detect trends
- Ensure priority research needs are identified, including for meteorological, hydrological and climatological areas, and are built into any national research programme and strategic framework
- Promote national priorities for climate change research, support the work being done in country and consider the possibility for setting up a trust to facilitate national research by nationals
- Priority and recognition at the national and institutional level should be given to an agency that implements early warning systems and climate change analysis
- Activate partnerships and resource sharing opportunities e.g. for a national centralised laboratory under the national research framework

- Address issues with intellectual property rights and data ownership of climate data, including within the National Research Framework to improve access to climate information
- Identify key data gaps in research and systematic observation and develop data collection programmes as part of the overall national programme for climate change
- Strengthen technical and human capacity for continuous research and systematic observation in general and analytical capacity for monitoring of climate change, including through training and up-skilling of Meteorology Service staff to maintain and analyse data for consolidated updates of climate information
- Develop technical capacity for the maintenance and upgrading of weather stations
- Cultivate support for continuous research and systematic observation for monitoring of climate change, including the need for outer island weather stations

Disaster Preparedness, Emergency Risk Management and National Hazard Risk Assessment

- **Summary of Capacity Gap**

Given the vulnerability[1] of the Cook Islands to natural disasters and the recent increase in both intensity and frequency of extreme climate events, it is crucial that the Cook Islands have effective disaster preparedness, awareness and response systems in place to be able to respond to and build resilience for natural and manmade disasters.

Previous assessment has shown that responsible agencies, the private sector and the general public of the Cook Islands are inadequately prepared to respond to disaster events and hazards[2], both natural and manmade. This inadequacy is even more pronounced with hazards that the Cook Islands have previously never encountered, such as tsunamis and major chemical or pollutant spills. Overall, Government has made positive steps towards risk management including legislation, policies and the establishment of Emergency Management Cook Islands (EMCI), however response and rehabilitation for all hazards remains inadequate. Plans and infrastructure for disaster preparedness are weak or absent in some cases, particularly for certain types of hazards (e.g. flood, drought, landslides, and disease pandemics). Much of the capacity and resources for disaster management and response are concentrated on the main island of Rarotonga, which increases the difficulty of logistical responses for Outer Islands.

National institutional capacity for coordinated disaster risk management is weak. Roles and procedures of disaster management responsible agencies are not clearly delineated, as was shown with operational and agency presentation exercises which highlighted problems with communications structures and operational procedures. The majority of the Outer Islands in particular are ill equipped and trained to deal with disaster situations. Cyclone shelters and disaster relief centres are under construction however they are yet to be fully completed and equipped, and will need proper management structures in place to be effective for its intended purpose.

Gaps exist in the areas of risk identification, assessment, monitoring and early warning. Very little risk assessment has been carried out in the Cook Islands to identify potentially vulnerable areas for different types of hazards (especially flooding, drought and tsunamis) and there is insufficient

[1] Vulnerability is defined as: "The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards". UN/ISDR. Geneva 2004.

[2] Hazard is defined as: "A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydrometeorological and biological) or induced by human processes (environmental degradation and technological hazards)" UN/ISDR. Geneva 2004.

capacity to undertake national hazard risk assessment or hazard mapping. Climate change considerations have not been integrated into current risk assessment procedures such as Environment Impact Assessments. Early Warning Systems for hazards are also limited. Inadequate information and assessment inhibits the reduction of underlying risk factors and preparedness for effective response and recovery.

Root Causes

- Response is mainly reactive rather than proactive for certain types of hazards (flood, drought, fire, landslides, disease epidemics etc)
- Clear definitions of 'disaster' and 'State of Emergency' and the procedures for declaring them need to be established
- Draft Disaster Risk Management Plan and legislation developed but still requires promulgation and support for implementation, and does not yet cover procedures for all types of hazards
- Lack of clarity of specific powers and duties of responsible agencies to prepare and respond to disaster situations and hazards
- Reliance on donor funds due to lack of policies and planning for response and rehabilitation following disaster and hazard events, including for setting aside reserve disaster response funds and stores of emergency supplies
- Limited plans for all types of disaster events and hazards including lack of national and island specific contingency plans for drought and lack of national emergency plan and procedures for tsunami's
- No clear institutional structures to address environmental disasters or to facilitate the integration of environmental management issues into national emergency management programmes, policies and plans.
- Lack of understanding of the economic implications of disasters and cost-benefits of risk management
- Poor ability to respond effectively and quickly to risk situations due to limited institutional capacity, resources, and insufficiently prepared disaster risk management agencies
- Insufficient testing of systems and procedures for emergency/disaster response, especially in the Outer Islands, to test the lines of communications and operations procedures of responsible agencies in different hazard situations
- Lack of institutional capacity to respond and manage health related disasters such as pandemics
- Red Cross is stretched beyond their capacity in disaster situations
- Data gaps and discontinuous data hinder decisive disaster and risk planning
- Limited capacity of EMCI and other disaster risk management agencies to undertake risk assessments and hazard mapping
- Lack of climate change models at an appropriate scale to be relevant to the Cook Islands
- Limited incorporation of risk into economic and infrastructure development.
- Majority of Outer Islands are ill equipped to deal with disaster situations given the lack of resources and trained personnel
- Limited financial resources to develop a progressive build up of capacity and enabling environment for disaster management in the Outer Islands
- Limited alternatives identified or available in the Outer Islands in the event of loss of shelters and essential services such as power, water, communications
- Insurance is not available on the commercial market for damage, such as storm surge, caused by some disasters
- Meteorological Service office is vulnerable to sea surge and damage from cyclones due to its location

- Limited transmission capabilities of media outlets or broadcasting mediums hampers effectiveness of current early warning system
- Limited alternatives or backup communications system in the event of failure of initial warning being received
- Contents of early warnings do not include key elements for preparedness e.g. sea surge
- Poor documentation and utilisation of traditional knowledge of climate systems, including warning signs and coping/survival strategies
- Piece-meal public awareness programmes of disaster risks and effects

ACTIONS:

- Ensure that disaster risk reduction is a national priority with strong institutional basis for implementation, reflected in budget allocations to undertake preventative and response measures
- Promote and support dialogue, exchange of information and coordination amongst early warning, disaster risk reduction, disaster response, development and other relevant agencies and institutions at all levels, with the aim of fostering a holistic and multi-hazard approach towards disaster risk reduction.
- Support the promulgation of the Disaster Risk Management legislation and the completion and implementation of the Disaster Risk Management Plan and National Action Plan
- Under the Disaster Risk Management legislation and plan:
  - Ensure that legislation is developed and implemented for all hazards risk reduction, including through training of responsible agencies
  - Clarify the roles and responsibilities of disaster management and reduction related agencies to increase response efficiency, and communicate these roles to the public
  - Specific powers and duties should be provided to the relevant organisations on all islands for the emergency maintenance of water supplies, emergency medical services, the carrying out of any major works, and the removal or disposal of any hazardous material or substance (oil and chemicals) including man-made disasters
- Ensure that draft MFEM policy being developed for emergency fund for financial response to disaster, takes into account all types of disasters and does not only cover the cyclone season but is year round.

- Assess existing human resource capacities and develop regular training and learning programmes in disaster risk reduction targeted at specific sectors (development planners, emergency managers, local government officials, etc.).
- Promote community-based training initiatives, considering the role of volunteers, as appropriate, to enhance local capacities to reduce risk and cope with disasters.
- Design and conduct regular integrated operational and agency presentation exercises - training should be undertaken to ensure that Cook Islands has skilled on-site commanders who are competent to manage any disaster
- Develop and improve collaboration between law and border control agencies and processes
- Develop and strengthen capacity to implement a National Pandemics Prevention and Response Strategy for the management of pandemics, such as the avian flu and SARS within the overall disaster plan context

- Locally appropriate risk scenarios based on anticipated climate change need to be developed, tested, put into place and integrated into sectoral and national strategies
- Support the development and sustainability of scientific, technological, technical and institutional capacities as well as infrastructure needed to research, observe, analyse, map and where possible forecast natural and related hazards, vulnerabilities and disaster impacts -- including for National Hazards Risks Analysis and Hazard Mapping

- Expand the scope of existing risk assessment systems, such as EIA, to incorporate climate and disaster related risks and support the development of common methodologies for risk assessment and monitoring.
- Mainstream disaster risk considerations into planning procedures, especially for major infrastructure projects, including criteria for design, approval and implementation of such projects and considerations based on social, economic and environmental impact assessments.
- Build new and improve existing community cyclone shelters and disaster management facilities on all islands and ensure that they are fully equipped with appropriate personnel identified and trained to manage such facilities
- Protect and strengthen critical public facilities and physical infrastructure, particularly schools, clinics, hospitals, water and power plants, communications and transport lifelines, disaster warning and management centres, and other important lands and structures through proper design, retrofitting and re-building, in order to render them adequately resilient to hazards.
- Implement measures to protect Meteorology Service building and equipment from sea surges and high winds
- Investigate and promote the development of financial risk-sharing and transfer mechanisms, particularly insurance and reinsurance against disasters and mechanisms such as a national disaster emergency fund with joint private and public sector support for areas where insurance is not available in the commercial market.

- Review current early warning systems and develop systems to address gaps, and strengthen the response to national disasters including meteorological information, communications and early warning systems to outer islands
- Installation of manual and automatic data monitoring stations on each island to improve data collection and consistency and enable immediate transmission of forecasts
- Develop localized early warning information systems that are people centered, ensure warnings are timely and understandable to those at risk, which take into account the target audiences, including mention of risks such as sea surge and guidance on how to act upon warnings, and that support effective operations by disaster managers and other decision makers.
- Provide for alternative communications methods that can fully transmit to all islands of the Cook Islands (e.g. iridium phones, ham radios)
- Establish storage facilities for medical, food/water facilities, communication systems and training centre
- Provide training for food storage and processing techniques to improve food security, livelihood of family household isolated from the availability of food products

- Strengthen or revive traditional knowledge relating to weather indicators of hurricanes and rain or drought.
- Strengthen or revive traditional and modern planting practices that help protect against drought, salt water infiltration, salt spray, floods, pests and diseases.
- Promote a culture of disaster resilience through awareness of hazards and vulnerabilities to disasters that communities and sectors face and actions to be taken on the basis of that knowledge
- Promote the inclusion of disaster risk reduction knowledge in relevant sections of school curricula at all levels and the use of other formal and informal channels

Green house Gas Inventories

- **Summary of Capacity Gap**

The first Greenhouse Gas Inventory for the Cook Islands was produced in 1999, using data from 1994, and remains the baseline for GHG emissions to date. Capacity to carry out further GHG Inventories on a regular basis is inadequate, especially given the limited number of locally available qualified personnel. IPCC guidelines for GHG inventories are complex and continuously evolving, and do not fully capture issues of scale for small islands developing states and the unique characteristics of the Cook Islands.

The major gap continues to be that data necessary to produce accurate inventories is either limited, inaccurate or may not be available except as estimates. A key constraint is the lack of accurate data on land cover in the Cook Islands, and how this is changing over time. On Rarotonga, it is clear that significant land conversions are taking place as more people build houses on croplands, forest land and wetlands. However, without regularly updated land cover data it is very difficult to accurately estimate how these land use changes are affecting GHG emissions.

The data required for inventories is of a cross-sectoral nature with multiple agencies and organizations responsible for data collection. There is no mechanism in place to coordinate, validate, and manage this data including information exchange. The quality of some data is also suspect as there is no verification or legal requirement to report accurate data.

Root Causes

- Lack of integration of GHG inventory data into practical application or for the development of policies for mitigation
- Limited mandate for relevant agencies to collaborate on the collection & dissemination of data
- Poor awareness of the need for collecting quality data resulting in incorrect or incomplete information sources
- Lack of Climate Change databases and information networks including for GHG emissions inventory, V&A and climate observatory systems data and ongoing input
- Some aspects of data (such as vegetation cover, maps and satellite images) are outdated or not scientifically assessed.
- Lack of ongoing training in IPCC guidelines, GHG inventory assessment, data collection and analysis
- Poor recruitment and retention of trained personnel in technical fields, including for GHG inventories
- Limited incentives to retain staff or recognition of technical qualifications
- Lack of organisational human resource development with regards to mitigation needs identified and planned for
- Poor knowledge and information handover procedures leads to loss of institutional memory and information

ACTIONS

- As an immediate priority, undertake a current assessment of GHGs in the Cook Islands – specifically highlighting emissions by source and type
- Develop and implement legislation and or policies as appropriate to mandate key agencies to supply and collect data and undertake annual GHG Inventories
- Develop capacity and institutional arrangements to undertake annual GHG Inventories

- Work with relevant information sources to update and improve data quality and assessment, including both private and public sector stakeholders
- Lobby under the convention process to have guidelines tailored to Small Island Developing States such as the Cook Islands, and in the interim adapt guidelines where necessary, noting difficulties
- Ensure training is available for new guideline requirements, or identify guidelines suited to national situation
- Assess and develop recommendations for policy makers of practical mitigation actions to reduce emissions from baselines
- Designate an officer or unit responsible for developing and implementing a communications strategy, to raise awareness of GHG emission trends in the Cook Islands
- Establish an easy to use GHG inventory database to record annual GHG activity data, (e.g. energy use, livestock numbers, waste etc.).

Mitigating GHG Emissions

- **Summary of Capacity Gap**

The major source of GHG emissions in the Cook Islands continues to be from fossil fuel energy used for transport and electricity generation. Reducing emissions from fossil fuel use requires application of energy efficient and renewable energy technologies. However, significant capacity gaps and barriers remain to the widespread application of these technologies. Other sources of GHG emissions include land use change, agriculture and waste management. Limited analysis into the potential of emission reductions in these sectors has been undertaken.

Emissions from Land use & Waste

Greenhouse gas emissions that result from landuse practises and waste in the Cook Islands is not easily assessed given the lack of quantifiable data. This includes the lack of scientific and economic baseline information of potential sinks and reservoirs of GHGs in the Cook Islands. Current agricultural practises have high usage of chemicals and fertilizers, which produce GHGs (nitrous oxide), due to pressures from limited land available for agriculture and high local demand for crops. Emissions from livestock farming remain significant and there is little understanding of options for reducing emissions from this source.

Steps have been undertaken to improve waste management practices, including the establishment of new landfills and recycling centres on Aitutaki and Rarotonga which have reduced emissions from open burning. However other outer islands do not have adequate disposal regimes for waste. Methane emissions from landfills (including old dumpsites), septic systems and piggeries waste are not monitored or mitigated, and methane recapture or reuse is not practised. Backyard burning of biomass and plastics is also standard practice, highlighting a lack of understanding of and concern for health and environmental consequences. It also highlights non-compliance and limited enforcement of legislation that bans backyard burning of plastics, as well as the limited alternatives to such practises. The urgent need for management plans and regulations for solid and sewage waste systems is reflected in the NESAF and needs to be addressed.

Root Causes

- No policies, strategies or regulations to reduce emissions (economic or legislative incentives to reduce GHG emissions)
- National Waste Strategy not yet endorsed and needs reviewing to take into account new practises
- Limited assessment of the level of pollution and GHG emissions from land use practices (fertilizer, clearance, piggeries, landfills etc) and how to reduce such pollution.

- Lack of policy and guidelines for eco-friendly importation practices
- Lack of strategies to strengthen enforcement of the Public Health Act – ban on burning of plastics
- Economic viability of organic farming in small islands and markets such as the Cook Islands has not been fully assessed
- Inadequate management and disposal of hospital and quarantine waste, which continues to be incinerated in an inefficient manner.
- Limited access to arable land for agriculture means intensive farming with no fallow periods
- Lack of technical and financial resources to develop mitigation projects
- Limited promotion/awareness of alternative farming practises and chemicals that do not require fertilizers such as organic farming
- Lack of awareness and information of measures and cost-effective technology to reduce GHG emissions and the long term economic and health benefits of such measures

ACTIONS

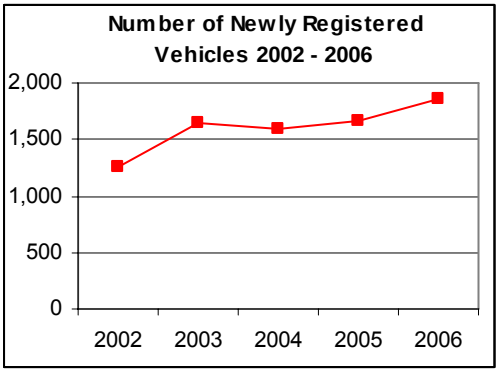
- Review, endorse and implement National Waste Strategy with special consideration of emissions reductions options
- Prioritise and implement National Waste Strategy subcomponents including a solid waste management plan to strengthen infrastructure, enhance institutional capacity, encourage private sector businesses and individual actions, increase recycling and reduce residual solid wastes going to landfill
- Develop a harmonized and integrated liquid waste management policy as part of efforts to reduce water borne diseases and environmental costs
- Investigate and implement locally appropriate practices and technologies for GHG emissions reduction and recapture including the development of supporting policies and legislation where appropriate and promotion of these technologies
- Encourage the switch from artificial to organic fertilizers to reduce nitrous oxide emissions
- Assess the options and practicality of introducing criteria or policy on importation practises and excess packaging
- Strengthen enforcement of burning bans and other waste regulations under public health act including through the provision and promotion of safer or more efficient alternatives

Emissions from Transport

The increasing number of vehicles per household means that transport emissions will continue to be a problem if mitigating measures are not implemented. Currently there are limited mechanisms in place to monitor the number of vehicles being imported and the condition in which these vehicles arrive. There is also no requirement for vehicles to meet any efficiency standards. Poor road quality, driving practices and vehicle maintenance contributes to inefficient fuel consumption and increases emissions. There is a general reluctance to change behaviours to reduce emissions from transport due to the limited access to locally available emission reduction technologies and the perception of high costs of technology and compliance by consumers. There are limited alternative transportation options readily available to the general public such as electric/hybrid/biofuel vehicles, public transport and bicycle lanes.

Figure 2: Number of new vehicles registered each year from 2002 - 2006

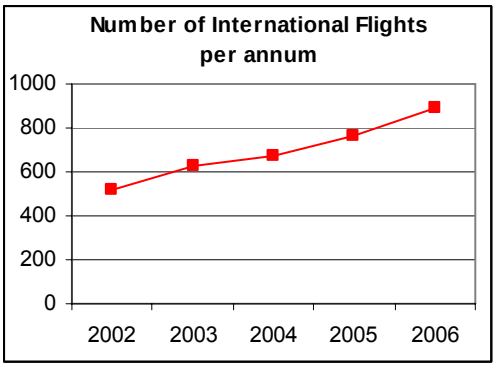
Year	Newly Registered Vehicles
2002	1,254
2003	1,641
2004	1,588
2005	1,660
2006	1,862



Emissions from fuel sold to ships or aircraft engaged in international transport (known as "bunker fuels") are a major concern as these are increasing rapidly and decisions made about accountability could affect us. The Cook Islands are a shipping registry and reliant on international sea and air connections for tourism, medical and food supplies. A future challenge is likely to be increased emphasis on reducing carbon footprints with rising cost of goods because of possible surcharges based on emissions produced e.g. food miles, sustainable afforestation and energy consumption.

Figure 3: Number of International Flights per annum from 2002 - 2006

Year	Total Flights
2002	519
2003	631
2004	670
2005	765
2006	894



Root Causes

- Lack of Cook Islands-specific policy, legislation, guidelines and standards for transport efficiency and emissions including making emissions testing mandatory as part of the Warrant of Fitness registrations
- Lack of Policy and appropriate legislation for the development of Vehicle Importation and Emissions Standards to control the numbers, type and age of vehicles imported
- Lack of policy and incentives to reduce private vehicle use and support public transport
- Lack of trained technicians and technology to undertake emissions testing
- Limited capacity for maintenance of alternative and fuel efficient vehicles (LPG, hybrids, solar)
- Lack of local examples showing successful reductions in transport GHG emissions
- Lack of experience with alternative, low-emission, transport fuels, such as bio-diesel.
- Lack of information/awareness of GHG transport emissions in the Cook Islands
- Limited private sector involvement in promoting environmentally friendly transport alternatives and practises
- Uncertainty about potential impact of bunker fuels emissions on the Cook Islands economy due to limited participation in the negotiations and decision making processes at the international level and because this is a recently emerging issue.

ACTIONS

- Promote and explore options for reducing transport emissions including through development and legislation of standards for vehicle importation in consultation with the private sector
- Develop overarching National Policy and legislation to reduce GHG emissions in the Cook Islands through the development and implementation of Renewable Energy, Vehicle Emissions and Importation Standards, Energy Efficiency Standards, Economic Incentives to reduce emissions and the integration of locally appropriate sustainable fuels.
- Draw on lessons learnt from other countries that have implemented such policies to develop an implementation strategy for monitoring vehicle importation and undertaking emissions testing in the Cook Islands including through private sector partnerships
- Incorporate training of technicians for emissions testing, and maintenance of alternative and energy fuel efficient vehicles into any emissions reduction implementation strategy
- Develop a road users campaign to promote GHG reducing tips such as carpooling and the cost saving benefits
- Investigate potential incentives and disincentives for the reduction of GHG emissions e.g. levy exemption and surcharges
- Encourage all alternatives to fossil fuel use, including walking and cycling, through improving public infrastructure and health campaigns
- Explore options for improving the public transport system with locally appropriate emissions reduction technology such as catalytic converters or similar
- Explore Clean Development Mechanisms and other opportunities for pilot/demonstration projects to show cost benefits of reducing transport emissions
- Ensure roads are well maintained to allow for fuel efficient driving conditions
- Implement pilot projects to trial biofuels production, use and suitability to the Cook Islands

Renewable Energy and Energy Efficiency

- **Summary of Capacity Gap**

Renewable Energy

The Cook Islands is highly dependent on diesel for electricity generation. In order to reduce our emissions it is necessary to increase efficiency in existing systems and deploy renewable energy options. It is difficult to convert from conventional energy as there are limited renewable energy technologies locally available, which are capable of generating significant amounts of energy to minimise dependence on diesel generation. The main renewable energy options identified for the Cook Islands are solar, wind, biofuels and possibly oceanic energy; however these all require further assessment and political drive.

The lack of an enabling environment to drive renewable energy is highlighted by the limited integration of renewable energy into National Energy plans and policies and supporting legislation. This is further compounded by the devolution of responsibility for energy supply to the Outer Island councils which has lead to fragmented implementation of energy services and made it impossible to coordinate energy development on a national basis. Te Aponga Uira supplies the majority of energy on Rarotonga and currently has no mandate to include renewable energy in its generation.

Previous attempts to introduce renewable energy concepts and technologies through projects have not always been successful, mainly due to the lack of consideration of whether technical designs are locally appropriate and sustainable. A major capacity gap is that there is scarce technical and human capacity to implement large scale renewable energy measures including lack of local capacity to operate and provide maintenance to alternative energy technologies.

There is little opportunity for individuals to utilise renewable energy at the personal level other than solar thermal heaters. The small and sporadic market for renewable energy products and devices means availability of affordable technology is limited.

Root Causes

- Lack of policies for renewable energy or identified targets for renewable energy in the Cook Islands
- Limited integration of renewable energy into National Energy Policy
- The National Energy Policy does not establish procedures to ensure that the development of renewable energy projects consider economic and financial viability, institutional competence and technical appropriateness.
- Limited political and financial support for renewable energy adoption and implementation
- Limited Cook Islands-specific guidelines and standards, policies and plans for renewable energy implementation
- Prohibitive costing and limited access to renewable energy technologies such as solar, wind, and bio-fuels
- Lack of economic incentives to convert from fossil fuel to renewable energy or more energy efficient technology.
- Te Aponga Uira (TAU) lacks mandate to include renewable energy in its generation
- Limited local research to investigate the types of bio-fuels suitable to our climate, including availability of resources as well as economic and environmental viability
- Limited information, awareness and promotion regarding use the use of technology
- Failure in the past to ensure good technical design of renewable energy installations, including their suitability to local conditions, proper operation and maintenance
- Technology inertia is a barrier – a strong preference to proceed along familiar lines (diesel generation), due to lack of understanding, experience and confidence in renewable options
- No comparable long term successful example in the Pacific of a system that integrated renewable energy into an existing grid
- No local facilities providing technical training for renewable energy technicians
- Strong incentives for technically trained personnel to migrate to New Zealand causing a continuing turnover of technical personnel and a continuing need for training
- Limited capacity of TAU and the Energy Division for forward planning to develop renewable energy systems
- Lack of capacity to develop and implement standards and certifications for both renewable energy technologies, including equipment specification standards and a system for technician certification
- Insufficient technically competent personnel in the outer islands makes it difficult to achieve the level of staffing necessary for reliable technical services and financial management of utilities
- Lack of local technical expertise to further develop and sustain renewable energy programmes and the use and transfer of clean and renewable technologies - finance, technical development, purchasing, installation, and maintenance capacity are almost non-existent for non-conventional energy implementation including grid connected renewable energy systems
- Lack of incentive to promote the use of more environmentally friendly high grade fuel (low sulfur) in the Cook Islands as opposed to current fuel grades

ACTIONS

- Lobby for political and financial commitment from Government for renewable energy
- Foster political will towards renewable energy through support and funding and an overall government energy strategy to reduce fossil fuel consumption
- Present a cost-benefit analysis of implications of renewable energy implementation
- Develop strategies and programmes that implement the Energy policy including the development and implementation of standards and policies for Renewable Energy
- Develop and implement a Renewable Energy Development Plan for Rarotonga as a priority to reduce petroleum imports and control electricity demand growth on Rarotonga
- Review National Energy Policy to clearly define procedures required before project proposals involving energy, including renewable energy and energy efficiency, can be approved.
- Investigate the potential for regional bulk buying of renewable energy technology
- Investigate the potential for economic incentives to encourage use of renewable energy technology
- Reduce the reliance on high GHG based fossil fuel by identifying and adopting technically feasible and financial viable alternative energy sources.
- Strengthen capacity of Energy Division to plan for and monitor the adoption of renewable energy technologies and the impact of economic incentives
- Improve forward planning capacity of local energy providers
- Revisit past feasibility assessment studies for integrating Renewable Energy into current energy system for their present and future viability and improve where necessary
- Build and develop the capacity of Te Aponga Uira (for Rarotonga) and the Outer Islands to integrate renewable energy into their energy systems, including capacity to design, install, operate and maintain renewable energy systems
- Strengthen communications and coordination between Energy Division and Te Aponga Uira
- Identify opportunities to mainstream data collection for renewable energy and energy efficiency into existing systems, in partnership with other relevant agencies to share resources
- Develop capacity for renewable energy training needs locally - training modules focusing on renewable energy should be made available for integration into technical training programs for electricians and plumbers.
- Implement a local training and accreditation scheme for renewable energy drawing on international and regional expertise
- Promote local research to investigate the types of bio-fuels suitable to our climate, availability of resources its economic and environmental viability with consideration of lessons learnt from analogous countries
- Promote the benefits of alternative technologies for renewable energy and energy efficiency at all levels and all scales through education and awareness, targeting decision makers and affected local communities, including through the use of pilot projects and incentives for consumers, e.g. caps rebate system.

Energy Efficiency

Significant potential exists for improved energy efficiency on both the supply and demand side. Many of the diesel generators are old and no longer operating efficiently. Some research has estimated that approximately 70% of diesel is wasted through inefficient generation. High energy consumption of fossil fuels is compounded by the importation of appliances that have low energy efficiency. Reducing emissions and energy consumption through the employment of energy efficient practices and technologies continues to be an achievable solution. While some businesses and households have taken steps to reduce their energy consumption, most have not. This reflects a combination of factors, including limited awareness of how to save energy and limited availability

of energy efficient appliances and fixtures.

Root causes

- Lack of locally applied energy auditing and energy efficiency labelling systems
- Lack of enabling environment for energy efficiency - e.g. legislation to ban importation of incandescent bulbs or low efficiency appliances, regulating air condition
- Limited energy efficiency considerations in the Building Code
- No mechanism to self monitor on a daily basis for personal household and business consumption of energy
- Lack of awareness of the amount of electricity consumed by different appliances and the options for reducing it
- Limited information and awareness and promotion of energy efficiency measures and technologies
- Lack of local examples of energy efficiency measures that do work in the local context to show benefits of these technologies in terms of energy and cost savings
- Lack of local people with experience and training to carry out high quality energy efficiency audits and to prepare practical recommendations for implementing the measures
- Lack of database of energy information
- Limited capacity within Energy Division to develop database, gather energy data, data checking, posting and analysis
- Subsidised tariff structures encourages inefficient energy consumption e.g. fuel subsidies in Outer Islands

ACTIONS

- Review Energy Division including organisational structure, functions and duties in the context of Renewable Energy and Energy Efficiency implementation and develop a programme to increase capacity
- Decrease per capita energy consumption by increasing efficiency in energy use through the adoption of new technologies and energy conservation practices
- Create an enabling environment for energy efficiency including through the development and implementation of policies and legislation for importation, design, construction, installation, and use of appliances and technologies (to restrict or ban low energy efficiency products)
- Develop strategies and programmes that implement the Energy policy including the development and implementation of standards and policies for Energy Efficiency and an Energy Conservation Act
- Investigate the potential for regional bulk buying energy efficiency technology
- Investigate the potential for economic incentives
- Implement a local training and accreditation scheme for energy efficiency drawing on international expertise
- Introduce mechanisms to monitor consumption of energy and raise awareness and educate consumers on energy efficiency options
- Strengthen demand side management – regulate the pattern of energy usage and provide incentives to reduce energy use
- Promote the benefits of alternative technologies for renewable energy and energy efficiency at all levels and all scales, in the form of pilot projects and incentives for consumers
- Develop a programme for Energy Auditing including training, in order to implement practical recommendations for cost saving measures (possibly through the energy permitting system)

- Develop capacity for training in energy efficiency locally - training modules focusing on energy efficiency should be made available for integration into technical training programs for electricians and plumbers
- Provide training to develop and strengthen capacity in project proposal development to support further energy efficiency projects, programmes and activities

Clean Development Mechanism

- **Summary of Capacity Gap**

The Clean Development Mechanism (CDM) is part of a trading scheme under the UNFCCC that allows flexibility for developed countries to offset current emissions by investing in projects in developing countries such as the Cook Islands, to reduce equivalent emissions (purchasing carbon credits). The Cook Islands has reservations about the flexibility mechanisms because the atmosphere sees no net reductions in emissions however this option still requires further exploration. Also, under current criteria the Cook Islands would have limited opportunities to access the CDM due to our small land area and relatively small GHG emissions when compared to other countries.

Root causes

- Lack of understanding and awareness of Clean Development Mechanism and GHG emissions trading systems as well as related financial mechanisms
- No Designated National Authority to review and approach CDM project proposals
- Limited assessment undertaken of national requirements and potential to access funding support under Clean Development Mechanisms and GHG emissions trading systems
- Limited potential for CDM in the Cook Islands based on assessments to date
- Lack of information over exact capacity and value of national sinks and reservoirs of GHG

ACTIONS

- Increase understanding and awareness of CDM and its implications for the Cook Islands amongst relevant stakeholders and decision makers
- Promote specific criteria, through AOSIS under the UNFCCCC process at the international level, which will assist small islands to access CDM specifically for renewable energy and energy efficiency.
- Identify and mandate a Designated National Authority to explore the options of CDM and its appropriateness to the Cook Islands
- Explore CDM and other opportunities for pilot/demonstration projects to show cost-benefits of reducing emissions

Thematic Area: Integrating and Institutionalising Climate Change

Integration of climate change priority issues into national, island and sectoral policies, strategic planning frameworks and operations remains insufficient. Climate change is still treated as a separate and isolated issue by some stakeholders and its integration into national and sectoral policies and plans is sorely constrained by the limited technical personnel to drive this process. Climate change is a cross sectoral issue that has the potential to affect many people in different ways and all sectors have limited internal capacity to plan for the immediate and long term potential impacts on their industries.

The lack of an overarching national climate change policy and programme to guide integration and institutionalising of climate change activities in the Cook Islands remains a significant gap. This

also means there is little budgetary support for climate change and no central agency mandated to coordinate activities. Reliance on externally driven project funds and the UNFCCC National Communications reporting cycle for funding implementation of local climate change projects means that implementation is ad hoc and usually governed by donor approved objectives. Current climate change mainstreaming efforts in key government ministries does not go beyond policy integration due to lack of funding for further internalisation activities

Root Causes

- Lack of National Climate Change Policy, Strategy and Action Plan including provisions for climate change cooperation
- Limited integration of climate change considerations into the national economic and development planning and budgetary processes
- Lack of National Climate Change Programme and implementing agency
- Climate Research, adaptation, renewable energy and energy efficiency are not priorities relative to other national areas such as education and health
- Limited understanding by decision makers of the priority climate change issues
- Key technology needs related to adaptation and mitigation under the UNFCC have not been identified
- Limited numbers of legal draftsmen to complete drafting/redrafting of key national policies and legislations such as water, building control, foreshore and natural resource management amongst others and most importantly the integration of climate change provisions into these legislations
- Lack of funding commitment from government to implement climate change initiatives including lack of funding for a national climate change programme
- Lack of awareness by various agencies of relevant climate change issues that affect their mandates in order to adequately factor them into planning processes
- Limited recognition by decision makers of the important roles of the Meteorological Service and EMCI, and how current institutional arrangements can compromise efficiency
- Lack of private sector or Government led risk sharing and transfer mechanisms for climate impacts

ACTIONS:

- Develop and implement a National Climate Change Policy, Programme, and Strategy and Action Plan to address risks of climate change to the environment, economy and our people.
- Incorporate climate change into the National Development Plans and discuss actions at all levels of planning and forums
- Undertake Technology Needs Assessment and Technology Transfer Project Design
- Improve knowledge and understanding, especially of budget decision makers, on donor funding mechanisms, guidelines and processes to access other funding for Climate Change-related programmes with the help of donor and implementing agencies
- Improve knowledge and understanding, especially of budget decision makers, of the priorities, costs and benefits of adaptation and energy planning decisions
- Explore and develop private sector or Government led risk sharing and transfer mechanisms for climate impacts, such as insurance
- Strengthen sectoral capacity to understand and incorporate climate change considerations into annual planning processes including through the development of climate change personnel within key ministries
- Identify and mandate a host institution and appoint a full time National Climate Change Coordinator to coordinate and mainstream climate change activities and enhance continuity of capacity

- Identify focal points in key government ministries, NGOs, outer islands, civil society, for Climate Change and communicate to them through a mechanism such as the NCCCT
- Strengthen capacity to integrate climate change and disaster management activities and expand focus from just being donor or project driven
- Review Meteorology Service and EMCI including institutional arrangements, organisational structure, functions and duties in the context of continuous research and systematic observation and climate risk management
- Support and acknowledge local expertise involved in monitoring and research in climate change in the Cook Islands
- Ensure on-the-ground implementation from climate change research and report findings

Thematic Area: Information Management and Exchange

Information, especially accurate and continuous data, is vitally important for the implementation of climate change activities. Climate change relates to and affects many sectors and industries in the Cook Islands (agriculture, marine, energy, tourism, health, infrastructure, transport, disaster management, meteorology etc) and in order to adapt to and mitigate further climate change, this information needs to be managed in a cohesive fashion and translated into a spatial information context.

Currently, there is inadequate baseline data in many areas relevant to climate change due to the lack of data collection programmes and the limited understanding of the importance of this data by decision makers. The validity of some datasets is also questionable and may lead to inaccurate reporting. Sharing of available data is hindered as occasionally there is a tendency for sectoral agencies to withhold data and information necessary for environmental planning and decision making.

Inadequate management of information continues to be a major gap, especially due to the limited human and technical capacity for database development, data collation and analysis, use of Geographic Information Systems, and mobilizing appropriate data dissemination to all levels of users. This is further compounded by the limited amount of funding available to implement and maintain data and information management systems.

Root Causes

- Lack of clear mandate and defined responsibilities for institutions to implement programmes and generate local and national climate change data collation and management capacities.
- Gaps in institutional arrangements for data management programmes for Statistics Cook Islands, Te Aponga Uira, and Energy Division of MOW and Outer Islands counterparts.
- Most climate relevant databases remain isolated and need to be upgraded with appropriate structures to enhance networking and information exchange
- High risk of capacity loss in climate change research, data collation, data analysis, database development and administration
- There is currently no incentive or stimulant for agencies personnel to be involved in mobilizing climate change information and knowledge or collaborating with other agencies databases and inventories, unless this is under a project mandate with appropriate funding.
- Lack of systematic communication amongst key stakeholders in some sectors to facilitate the collection and collation of information useful for climate change
- Lack of data validation processes means the quality of some data is suspect
- Absence of consequences for misreporting or fabricating data for convenience

ACTIONS:

- Consult on practical solutions to define responsibilities of relevant agencies and organisations to implement programmes and generate local and national climate change data collation and management capacities.
- Draw on stocktakes under processes such as *UNCCD National Reports, UNFCCC National Communications, the National Biodiversity Strategy and Action Plan, Environment Vulnerability Indices, Ozone Depleting Substances NCAP etc*, to review current databases for upgrade and identify opportunities and synergies for networking and information exchange.
- Include identification of appropriate personnel and training as part of a programmatic approach to database and inventories development, data collation and analysis, mobilizing information and dissemination
- Propose and develop mechanisms for systematic information exchange and secure National Climate Change Country Team and Heads of Ministry support to mandate such mechanisms
- Establish and maintain a Clearing House Mechanism to collate, store, and disseminate climate change information including of past, current and on-going activities and research for stakeholders awareness and promoting linkages, supported through the process of National Communications.
- Strengthen capacity for the development and ongoing maintenance of clearing house mechanisms
- Encourage the use of existing tools like the Pacific Environmental Information Network (PEIN), and Population Geographic Information Systems (POP GIS) for information sharing within and between agencies, electronically cataloguing and mapping/statistical applications
- Ensure that systems such as PEIN and POP GIS are integrated and complement each other
- Foster the importance of the Small Islands Developing States (SIDS) network for addressing issues both nationally and internationally

Thematic Area: Education Awareness and Training

Climate change awareness and understanding is limited, especially in the Outer Islands, which hinders the Cook Islands resilience to climate change. Education and awareness programmes for climate change tend to be on an ad hoc basis and limited by the lack of locally relevant or produced educational and media materials and the lack of capacity to produce simplified bilingual resources. Climate change is not incorporated into the current education curriculum at any level and the capacity of educators to teach climate change material is severely limited by both resources and comprehension of the subject.

Root Causes

- Lack of localized climate change information readily available for use by media or the general public
- Lack of simplicity and appropriateness in reporting format and climate change language at different levels of users
- Lack of a formal climate change programme and coordinator to implement information exchanges, education and awareness programmes.
- Lack of professional development and resources for teachers in climate change, disaster management
- Limited promotion of climate change in the Outer Islands

ACTIONS:

- Develop a systematic approach to environmental education awareness including regular specific climate change communications strategies and measures for different levels, including NGOs and Community groups
- Strengthen partnership roles in strategy design and implementation. *e.g. Live & Learn, the Green Maze, and interactive programmes such as Sandwatch, SPARCE,*
- Incorporate climate change into the formal education curriculum and provide resource materials and professional development to support teachers with this subject area
- Provide for the collation and ongoing documentation of local climate change relevant information, including traditional and local knowledge
- Produce media and education packages featuring local climate change relevant information in a simplified bilingual format.
- Explore the use of innovative communications mechanisms such as local radio stations and Radio Network for dissemination climate information
- Need for 'information brokers' who are able to undertake the translation of scientific and technical information into simplified clear format/language
- Encourage schools to take part in environmental monitoring e.g. beach, climate, water and assist NGOs and Government Departments
- Encourage regional tertiary organisations to undertake climate change research for the Cook Islands, working with local counterparts
- Undertake training for planners, developers and decision makers on how to incorporate climate change and disaster management considerations into infrastructure and development

Thematic Area: Technology Transfer

Transfer of new technology for adaptation and mitigation, particularly renewable energy and energy efficiency, has limited general support capacities in-country, ranging from technical advisers, identification and assessment expertise, to management and data analysis. Overall, the Cook Islands lacks the capacity to sustain technology transfer, utilisation and especially maintenance programmes. There is also poor utilisation of advanced technologies in some key sectors, partly due to technology inertia and a lack of understanding, experience and confidence in technologies that are not already being used locally.

Root Causes

- Poor communications and often language difficulties, especially in terms of technical instructions and guides for adopted technologies
- Limited trained local engineers and technicians
- Responsibilities between key stakeholders are lacking or poorly arranged for transfer, adoption and use and is often without sustainable funding support
- Poor communication of lessons learnt, successes and failures of adoption and use of technologies
- Lack of identified mechanisms for adopting and using simple and low costs technologies options such as solar desalinisation technology
- Limited screening of technologies for appropriateness to local conditions

ACTIONS:

- Establish mechanisms and policies to ensure that technology transferred to the Cook Islands is locally appropriate, sustainability is determine in the initial and review stages before approval and that capacity for maintenance of such technologies is in place.

- Ensure technology transferred is labelled in English and have both instruction manuals and practical demonstration training
- Provide resources and training opportunities to develop local capacity in engineering, policy and technical areas
- Consider sustainability in any technology transfer related project design at the initial and review stages
- Investigate options/mechanisms for inter-agency resource and capacity sharing
- Gather and disseminate lessons learnt in adoption and use of technology transferred

Thematic Area: Phase Out of Ozone Depleting Substances

As a member party to the Montreal Protocol on Substances that deplete the Ozone Layer, the Cook Islands are required to phase out Ozone Depleting Substances by specified dates. A National Compliance Action Plan (NCAP) for the Cook Islands has been prepared to manage the phase out however there is a lack of capacity, enabling environment and institutional structure to do so. Relevant agencies have limited capacity to carry out ODS responsibilities for implementation of the NCAP including policing, enforcement and reporting requirements. There has also been difficulties in accessing ODS data from the private sector and outer islands for reporting requirements.

Compliance with ODS phase out requirements by some importers and merchants has been limited and some old technology, such as refrigerators running on CFC 12, are still in use. This is perhaps due to the lack of awareness of ODS and phase out requirements, lack of identification of products and services both imported and local that utilise ODS, and lack of awareness of best practices and alternative goods to purchase. Training programmes to address both climate change and ODS related areas of concern, such as release of ODS and GHG gases to the atmosphere, remain insufficient.

Root Causes

- Lack of Policies and legislation controlling the import, use, management, disposal of ODS or appliances using ODS
- Limited capacity for implementation of ODS activities
- Lack of appropriate disposal regime for ODS
- Lack of a National Compliance Centre for ODS to implement the NCAP
- Current lack of a permitting process for imports of ODS
- Lack of air pollution monitoring programme and capacity to implement
- Lack of sector specific strategies under the NCAP for the management and disposal of ODS
- Customs reporting does not match the reporting requirements of the Ozone Secretariat and the Multilateral Fund under the Montreal Protocol, especially in terms of detailed ODS inventory units and product identification codes
- Lack of clear labelling and signage for customs inspection (border control)
- Limited local personnel trained in handling and transporting of ODS
- Limited equipment and ongoing training of refrigeration technicians, customs officers and recyclers in recovery of ODS gases, identification/handling and technical aspects
- Risk of ‘training fatigue’ as a number of new environment regulations adding to customs and quarantine inspection and control requirements are passed
- There are no simple checklists for customs and importers of goods containing ODS that would need to be controlled
- Limited development of ODS databases
- Limited, especially for the development of education and awareness materials for phase out of ODS

- Lack of public awareness of the potential health impacts of ozone depletion, and the need to phase out ODS especially understanding the implications of non-compliance, such as trade embargoes under the Protocol.
- Lack of Cook Islands specific monitoring programme for ozone depleting substances
- ODS terms difficult to translate into Cook Islands Maori
- Lack of awareness of alternatives to products utilising ODS and best practices
- Notifications for phase out of ODS only available in the Montreal Protocol text
- Lack of awareness programmes and readily available localised information on ODS, access, usage, their impacts and implications for people in the Cook Islands

ACTIONS:

- Develop ODS legislation and undertake consultation process with relevant stakeholders for promulgation of ODS legislation controlling the import, use, management, and disposal of ODS or appliances using ODS
- Designate Agencies to enforce elements of the legislation especially at the border and form partnerships for ODS phase-out
- Build on the NCAP to address challenges and identified capacity needs for the phase out of ODS
- Develop sector specific strategies for phasing out ODS in the Cook Islands in partnership with other relevant activities such as climate change mitigation and waste related conventions e.g. bulk white ware waste disposal.
- Consider utilising a broader existing committee such as the National Environment Council, NCCCT or the proposed Hazardous Substances Committee (Dirty Six)
- Develop monitoring programmes for enforcement and permitting systems once legislations are in place
- Need to adopt recognised standards for an ongoing accreditation scheme for licensing of ODS handlers and possibly transporters
- Customs officers to be trained in the need for permits and permitting requirements to reflect the types of ODS being imported
- Develop and regularly update a simplified ‘goods containing ODS’ checklist and train Customs and importers to use this checklist as well as promoting the benefits of ODS phase-out as well as identify and promote alternatives
- Further trainings; regional, in-house trainings for additional staff, on climate change and ODS related areas of concern
- Ongoing training of refrigeration technicians, customs officers and recyclers in identification/ handling, and technical aspects of ODS and their impacts,
- Provide incentives for the use of alternatives to ODS in public and private sector.
- Increase awareness and education at all levels for climate change and ODS concerns on alternatives to ODS, ODS appliances and best practices for the phase out of ODS through participatory approaches, ongoing media campaigns, promotions and advocacy programmes.
- Identify options for ODS and ODS appliances alternatives, and promote awareness to importers and merchants
- Broaden the scope of awareness programmes to encompass community awareness campaigns and education at all levels in our communities
- Simplify notifications on phase out of ODS from the Montreal Protocol text, and make available on posters, pamphlets, website etc. easily accessible to public and industry

Thematic Profile

Land Degradation and the UNCCD in the Cook Islands

I. Introduction to Land Degradation programmes and capacities

a. Background

1. The objective of the United Nations Convention to Combat Desertification (Land Degradation) UNCCD is to combat desertification and mitigate the effects of droughts or human activities through effective action at all levels supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with the aim of achieving sustainable development in affected areas.
2. Combating desertification will require long term solutions that focus on affected areas to improve productivity of the land, rehabilitation, conservation and sustainable management of the land and water resources leading to improved living conditions, in particular at the community level. It is recognised that certain land forms and ecosystems are extremely vulnerable to over-exploitation and inappropriate human activities linked to poverty, political uncertainty, deforestation, and inappropriate agricultural and industrial practices. Real and difficult changes will have to be made, both at the international and the local levels.
3. Therefore current global commitments were focussed on stopping this growth in land degradation from reaching alarming levels by focussing on sustainable land management issues.
4. At the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992, the UN Small Islands Development States (SIDS) conference in Barbados in 1994, and recently in Mauritius, SIDS brought to the fore concerns with land degradation on small islands.
5. The UN Convention to Combat Desertification was adopted in June 1994 and entered into force in December 1996. The Cook Islands, as a member of SIDS and having concerns with foreshore erosion, filling of wetlands and farm land soil erosion, acceded to the Convention on 21 August 1998 and entered into force on 19 November 1998.
6. Land degradation programmes in the Cook Islands were focussed mainly on the following issues:
    - Coastal and sloping lands erosions
    - Watersheds and Wetlands management
    - Agricultural, housing and commercial lands development
    - Waste Management
7. The CCD programmes are currently coordinated within sectors and not yet fully organised as a single national programme. While there has been many activities related to CCD being implemented in-country, coordination of these activities within the framework of a national CCD programme remains a challenge.
8. This fragmentation of land degradation programmes was evident in the NESAF 2005-2009, where strategies related to CCD were spread over various sectors.
9. This thematic assessment of the CCD is therefore a continuous attempt to improve the implementation of the NESAF by identifying capacity constraints and gaps likely to impede progress in implementing national programmes related to CCD. This will help the Cook Islands meet its commitments and obligations under the CCD. Additionally, this assessment will identify priorities and needs for capacity building in the Cook Islands and link country action to the broader national environmental management and sustainable development frameworks.

b. UNCCD Requirements

The primary obligations of the UNCCD as they relate to the Cook Islands interests and central to this thematic assessment were highlighted as follows:

- The general obligations of the Convention requires the Cook Islands to **create an enabling environment by strengthening legislation and establish long term policies and action programmes, including National Action Programmes (NAP)** to combat land degradation and drought. These policies, strategies and priorities must be adopted within the **framework of sustainable development** and **poverty alleviation** as guiding principles.
- Priority is also given to the **strengthening of sub-regional, regional and international coordination and including cooperation** between government organizations.
- The Convention also calls upon the Cook Islands, based on its own circumstances, to **identify and mobilize new and additional national, sub-regional, regional and international financial resources** to fund both national and local development programmes including NGOs which gives priority to dealing the effects of drought and land degradation.
- The Convention also articulates the importance of **providing access and developing education and public awareness measures including exchange of information in the appropriate context to schools and the general public**.
- The Cook Islands is also required to **facilitate the transfer, acquisition, adaptation and development of environmentally sound, economically viable and socially acceptable technology** relevant to combating land degradation and mitigating the effects of drought. The Cook Islands is also required to **provide appropriate training and technology regarding the use of alternative and renewable energy sources** aimed particularly at reducing dependence on wood for fuel.
- Capacity building requirements also commits the Cook Islands to the **promotion of alternative livelihoods, including training in new skills**; **training of decision-makers, managers and personnel responsible for collection and analysis of data for disseminating and using early warning information** on drought conditions, water resources and for food production.
- The Convention defines for the Cook Islands the importance of **information collection, analysis and exchange** (relevant **short-term and long-term data and information**; particularly to ensure **systematic observation of land degradation** in affected areas and to better understand and assess the processes and effects of drought and desertification).
- Provisions on **research and development as well as monitoring** commits the Cook Islands to provide measures likely to promote **effective early warning and advance planning measures for periods of adverse climatic variation** (provided in appropriate forms). These measures **include technical and scientific co-operation** in the fields of combating desertification and mitigating the effects of drought **through appropriate national, sub-regional and international institutions. Joint research programmes** (also involving public and private sector) for the development of improved, **affordable and accessible technologies for sustainable development** is also important for the Cook Islands

II. Overview of Land Degradation and UNCCD Implementation in the Cook Islands

Stakeholder consultation combined with SWOT and Gap Analysis highlighted several areas with capacity gaps. Drawing on these results of the consultations, the NCSA Stocktake report, and other national reports produced during the NCSA project, Root Cause Analysis was used to further define problem areas and determine detailed capacity gaps.

Many areas identified under Land Degradation were found to be key cross-cutting environmental issues, and as such, will be analysed in the Cross Cutting Report. These include water resource management, development in the coastal zone, waste, pollution and sanitation, and resource management. The remaining issues have been refined into four key thematic areas for further in –depth analysis.

The key land degradation thematic areas identified are:

1. Development Activities
2. Land Use Practises and Management
3. Mainstreaming of Land Degradation and Sustainable Land Management
4. Management of Knowledge and Technical Capacities

Gaps identified during this process as cross-cutting capacity issues that also affect Biodiversity and Land Degradation, including gaps in education and awareness, mainstreaming of environmental management, and information management and exchange, have also been transferred to the Cross Cutting Report.

Thematic Area: Development Activities

Over the years, improper and largely uncontrolled developments and activities in the inland area, for residential housing or commercial reasons (other than agriculture), has occurred due to the socio-economic pressures of urbanization. The expansion of physical infrastructure into rural areas, and encroachment of development into marginal forests, wetlands and hill-slopes is placing stress on natural ecosystems and land resources which are already in limited supply. Activities such as excavations and land clearance on steep slopes, cut and fill, and poor infrastructure location impact on the land and contribute to erosion and degradation.

National policies, legislation, strategies and regulatory frameworks related to landuse and development processes are weak, outdated and lack cohesion. Adverse stresses and impacts from development are not limited to the island of Rarotonga, however current capacity and resources at all levels is overstretched and insufficient to adequately focus on development on all islands as well as compliance and enforcement of the Environment Act 2003, the Building Code and Health regulations on a national scale.

A major gap continues to be the limited incorporation of environmental considerations into planning for development activities and the lack of appropriate guidelines and standards to manage land use. Incompatibility and conflict between traditional land tenure systems and related land use legislation also complicate the situation and there are concerns about the implications these have on land owners and land use. At the institutional level, development issues concern multiple agencies and individual roles and responsibilities or development approval processes and procedures are not clearly defined and disseminated for public awareness.

Root Causes

- Lack of national policy direction, in part, due to the lack of integrated land and resource use policy and legal platforms
- Current Land Use Act 1969 and land zoning regulations out dated and failed to establish effective regime to regulate development
- Environment Act 2003 does not adequately clarify procedures for development approval, including the need for building permits
- Limited resources, financial support and commitment for nationwide implementation of development related legislation and policies such as the Environment Act 2003, building code and health regulations, including appropriate institutional arrangements, human, financial and technical capacity for enforcement and compliance
- Limited application of land use planning systems
- No mechanism developed to subsidise the retrofit of existing septic tanks and sewage systems to conform to new standards under the new Sewage Regulations
- No available effective and appropriate guidelines for environmentally sound development practises and standards (including for siting, construction, development and operation of activities) to manage land use while minimising land degradation from development, and to promote voluntary compliance through awareness of available options
- Lack of commitment to improve relationship between common laws and traditional land tenure systems
- Lack of information sharing and communications on traditional knowledge and practises related to land use
- Insufficient resources and capacity to adequately promote, especially at the community level, awareness of and compliance with land use development and legislative requirements and procedures, including for the Environment Act, Public Health Act and Building Code
- Poor environmental and resource capacity information
- Lack of resources and capacity (institutional, technical and human) for implementation of sustainable land management measures
- Piece meal approach to large scale development, such as tourism accommodation, that does not take into account cumulative effect of operation on the environment (waste, proximity to residential and sensitive areas, availability of water)
- Land owning families do not take into consideration environmental implications of the distribution and subdivision of land and its use, including improper access ways that can exacerbate soil erosion (especially on sloping land and foreshore) and options for communal waste treatment systems where feasible
- Survey maps do not always provide information of contours and other natural features of land i.e. streams
- Ineffective communications between the various development approval agencies as well as with developers for coordination of approval and monitoring of development activities
- Lack of formalised process and procedures for approval and monitoring of all development activities
- Limited capacity, especially personnel and resources, to undertake coordinated monitoring activities on a regular basis
- Environmental impact assessments are project and site specific only and are not based on any sound baseline information of natural resources and processes
- Excavations work for development purposes do not necessarily follow proper plans i.e. proper engineering reports, planning and EIA consents
- Limited awareness of local heavy machinery operators, engineers and decision makers of the environmental damage that can be caused by improper excavation and land clearance practises

- Lack of formal training programmes for local heavy machinery operators in good environmental practises and sound methods of excavations that minimise potential for land degradation
- Limited number of local engineers with capacity to provide support and advice to machinery operators on proper land use development, clearing and excavation

ACTIONS:

- Develop appropriate policies, plans and regulatory frameworks to promote sustainable land use and development practises
- Develop and establish, through a consultative process with communities, national and local policy, plans and guidelines to manage resource use and management
- If appropriate, repeal the Land Use Act 1969 and Land zoning regulations and draft new legislation based on extensive community consultation and scientific research and analysis and compatibility to land tenure system
- Adopt a balanced land and resource management framework that is in harmony with the rights of traditional land owners, traditional conservation practices, island customs and the land tenure system.
- Strengthen existing or draft new building code and health legislation to support compliance and enforcement of development activities and provide appropriate training for users
- Strengthen the existing legal regime, including the promulgation of regulations under the Environment Act 2003 to control development in specific areas of concern and the environmental impacts assessment (EIA) (or permits and consents) process which should take into consideration impacts from extreme events and climate change.
- Encourage all islands to accede to the Environment Act 2003 including through support, promotion of its benefits and the promulgation of islands bylaws
- Encourage the incorporation of relevant principles from the Environment Act 2003 into individual islands bylaws
- Legislation should be established to empower appropriate agencies to monitor and manage all development activities
- Strengthen regulatory bodies and policies that govern development and renew partnerships with tourism bodies
- Review and formalise process for approval and monitoring of development activities with all relevant stakeholders in order to address problem areas, define roles and responsibilities and develop harmonised procedures and planning approval processes
- Institute an integrated land use approach which melds with the Environment Act (and its endeavours) and the customary system of tenure to guide land use change, tourism and urban development and associate infrastructure, based on information and knowledge development in partnership with communities
- Undertake, where necessary, institutional reform and capacity development to facilitate improved land administration, management of current development efforts and projected economic growth, including the promotion of efficient, effective and more dynamic approaches to land use, planning, development, monitoring and management which will involve a participatory and consultative approach. Capacity development including through knowledge sharing, training, technical capacities, suitable SLM practices including policy reform to support the full integration of SLM practices into national policy and plans
- Empower appropriate agencies to undertake a comprehensive inventory of natural resources, land degradation and existing development conditions (on a Geographic Information System (GIS) platform), which should provide baseline information for resource management and development decisions (including environmental impact assessments).
- Build capacity of responsible sectoral staff and all relevant stakeholders on the specific issues and mandates of other land agencies and in the implementation of land use and development legislation to ensure clear understanding and avoidance of conflicting powers

- Support activities that monitor the environment for land degradation such as beach profiling and coral monitoring and extend to cover all islands in the Cook Islands
- Review and strengthen the partnerships with the Business and Trade Investment Board, Banking Institutions and the regulatory bodies for the incorporation of environmental considerations into development planning at the early stages and their role in the permitting and monitoring process
- Undertake a feasibility assessment to identify possible mechanisms to support the retrofit of septic tanks and sewage systems and institute incentives
- Develop a participatory approach to land use planning for landowning families with targeted public awareness programmes to focus on the role of and options for landowning families to alleviate land degradation and promote public good, environmental benefits and future benefits
- Establish a mechanism to facilitate communications between all relevant development stakeholders to strengthen the approval and monitoring of all development activities
- Develop effective communications and awareness programmes for development process and procedures targeting developers, private sector and communities
- Assess the effect of development activities on availability and use of natural resources
- Further assess the problem of piece meal approach to large scale development and develop recommendations for action
- Make information of contours and other natural features i.e. streams a standard requirement for all survey maps
- Develop, incorporate into recommendations/requirements for all development activities, and widely disseminate information on locally appropriate measures and practises for Mitigating Land Degradation, where appropriate (including excavation techniques, soil erosion control measures etc)
- Incorporate into best practises guidelines and standards the recommendation that Engineers supervise excavations at all times under any condition
- Promote voluntary compliance through continuous education and awareness programmes and the application of best practises guidelines and standards

Thematic Area: Land Use Practises and Management

Land Use Practises

- **Summary of Capacity Gap**

Uncontrolled vegetation clearance on land and wetlands including denuding of arable agricultural land deforestation and foreshore burning, as well as the lack of awareness of the impacts of such practises on surrounding areas, has lead to increases in the incidences of land degradation in the Cook Islands. The decline in arable agricultural land due to competing land uses in particular is a concern and the traditional land tenure systems mean that landowners are free to do what they want with their land, within the limits of the law, including develop arable land for activities other than agriculture.

Poor and unsustainable agricultural practises including improper use of agricultural inputs (overuse of chemical and fertilizers), inappropriate farming practises, poor land systems management and improper water management, increases the potential for degradation of land. Pressures from other sectors to increase production to meet high demand has meant that agricultural activities tends to be monoculture and have a more vigorous commercially driven focus, without much consideration of consequent impacts of such practices on the land, environment and human health. Little information is available to raise awareness of unsustainable land use practices, and efforts to promote, adopt and implement sustainable agricultural practises at the individual and commercial level, including organic farming, are constrained by resources.

Root Causes

- Lack of integrated land and resource use policy and legal platforms
- Narrow efforts to incorporate environmental considerations into the existing sectoral policies
- Limited awareness of the location and value of arable land to encourage preservation of prime arable land for agricultural purposes
- Agricultural activities tend to focus on maximum production yield rather than maximum sustainable yields
- External regulations from export partners requires mono-cropping of some export crops
- Limited awareness on the need for environmentally sustainable agriculture practices and its benefits to environment and human health
- Limited training opportunities for agricultural activities for growers
- Limited emphasis and support for the role of extension officers in Agriculture for promoting environmentally sustainable agriculture practices
- Limited knowledge, including traditional knowledge, of locally appropriate best practises, technology and technical know-how for environmentally sustainable agriculture practices
- Limited promotion of successful local cases which showcase the benefits of sustainable agriculture practices
- Few incentives or support for farmers to implement Sustainable Land Management practices including appropriate soil conservation measures
- lack of proper considerations for forest trees and soil structures in ecosystem functions
- Lack of policies to ensure proper consideration of forest trees and soil structures in ecosystem function in any developmental activities
- Lack of knowledge and information on importance of trees and vegetation cover for alleviation of soil erosion and in the water cycle.

ACTIONS:

- Ensure that environmental considerations for land degradation and sustainable land management are promoted and integrated into relevant sectoral policies and plans
- Strengthen technical support services of Ministry of Agriculture to local communities to ensure sustainable practices of land cultivation
- Develop policy to ensure proper consideration of forest trees and soil structures in ecosystem function in any developmental activities
- Promote understanding of the importance of ecosystem functions as it relates to land degradation
- Conduct educational programmes of all kinds (formal, informal and non-formal) to promote sustainable land management practices
- Provide information to stakeholders on land capabilities and suitabilities, to assist with the promotion of sustainable agricultural practises
- Develop awareness programmes to promote the value of arable land for agriculture to support economic growth and food security and to encourage preservation of prime arable land for agricultural purposes
- Develop, adopt and promote locally appropriate environmentally sustainable agriculture practices that also considers human health, to prevent further land degradation
- Support further awareness and training programmes on environmentally sustainable agriculture practices in a hands-on practical approach with Agriculture Officers and growers, highlighting successful local cases and benefits to the environment and human health
- Encourage the use of organic farming as sustainable alternate substitutes to chemical overuse
- Further promote integrated pest/farming management practises at all levels, including through training

Rehabilitation of Degraded Land

- **Summary of Capacity Gap**

The extent, causes and severity of land degradation in the Cook Islands is not accurately known, owing to the lack of data collection and limited capacity and resources to undertake such a programme. There are no mechanisms in place to discourage or mitigate land degradation, including penalties for causing degradation, or any restrictions on the use of land following degradation. For known degraded lands, rehabilitation after use is rarely planned for, and there is little information available about locally appropriate options for rehabilitation and resources necessary to achieve this.

Root Causes

- Limited capacity and resources to survey, map and assess the extent, causes and severity of land degradation in the Cook Islands
- Limited coordinated effort at the national and local level to enforce any significant control over the use and rehabilitation of degraded land areas
- Lack of policies, plans and legislation for proper rehabilitation of degraded land after use i.e. landfills, dumpsites, quarries etc

ACTIONS:

- Undertake assessment and data collection programme to determine and map extent, severity and causes of degraded land areas in the Cook Islands including possible options for rehabilitation
- Develop best practise guidelines for sites of activities that may degrade land, including aggregates mining, local dumpsites and landfills, to minimise potential land degradation and develop rehabilitation plans following use
- Develop locally appropriate plans, policies and legislation to ensure the proper rehabilitation of degraded land, and develop appropriate capacity to monitor and enforce such plans
- Develop good environmental practises guidelines especially for excavations and land clearance to minimise potential land degradation
- Ensure proper training and licensing for local heavy machinery operators in the guidelines for good environmental practises for land clearance and excavations
- Promote the need for research and studies into the impacts of soil erosion and sedimentation and locally appropriate technology and methods for mitigation

Thematic Area: Mainstreaming Land Degradation and Sustainable Land Management

Land degradation and sustainable land management are relatively new issues to the Cook Islands that are starting to gain awareness in-country however, many activities are undertaken today would fall under the banner of addressing these two issues. There is no general recognition on the part of politicians and decision makers that land degradation is a significant barrier to sustained economic development and therefore a lack of mainstreaming into sectoral and national policies and plans. There continues to be poor coordination mechanisms at both intra-governmental (between national agencies) and inter-governmental (between national and Outer Island government) levels which continue to thwart attempts to institute integrated decision-making. [3]

Currently, there are no initiatives that specifically address land degradation and sustainable land management in the Cook Islands. Past attempts have been hindered by piecemeal and ineffective policy platforms, weak institutions and poorly integrated legislative frameworks. Existing policies and plans are primarily focused on individual sectors, or do not adequately consider the significance of

[3] McIntyre, M. (2007). – Excerpt from 'Capacity Building for Sustainable Land Management in the Cook Islands', GEF Medium Sized Project Proposal

sustainable land resources for economic and social development. Legislation for land use planning and associated natural resources management are weak thereby affecting enforcement. [4]

Institutional structures and processes of those currently engaged in combating drought and land degradation problems are fragmented and dysfunctional. While key national institutions covering environment, conservation, forestry, agriculture, land management, rural development and information exists, there are very weak horizontal (intra-government) linkages in policy, charters and differentiation of roles, operational and practice laws, information, corporate planning and implementation practices. [5] A programmatic approach to combating land degradation problems is lacking, as well as an agency responsible for coordinating activities for land degradation and sustainable land management.

Root Causes

- Lack of awareness by decision makers and the general public of the need for consolidated and sustainable management of natural resources
- Fragmented institutional structures and activities for forestry, water and land use and survey management as government institutions and NGO's all tend to facilitate and coordinate their own technical and scientific development activities
- Too much emphasis on sectoral plans that achieve sectoral objectives without consideration of overall national objectives and public good
- Lack of National Land Degradation Programme or Plan of Action and agency mandated to drive it
- Lack of government policy on land degradation and sustainable land management
- Limited available resources to develop new legislations and regulations
- Poor coordination mechanisms between agencies, private sector and communities for integrated decision making
- Limited capacity, insufficient and scattered baseline data to assess integrity of natural resources and ecosystems and develop land information management systems to support informed decision making
- Lack of awareness by decision makers and the general public of the importance of being proactive in addressing land degradation problems and especially before the damage is irreversible
- Ad hoc approach by government agencies to delivery of resources and services to local communities
- Limited capacities in understanding regional and international partnership agreements and policies
- Lack of resources/funding/commitment from decision makers
- Outer islands land degradation interests not always being fully considered
- Funding commitments for UNCCD mostly targeted for enabling activities and not for physical implementation programmes

ACTIONS:

[4, 5] McIntyre, M. (2007). – Excerpt from 'Capacity Building for Sustainable Land Management in the Cook Islands', GEF Medium Sized Project Proposal

- Draft and promote policies related to land use and secure high level support and commitment for implementation through information sharing and awareness raising of the links between SLM, environment sustainability and economic development.
- Complete the NAP and strengthen national ownership of NAP across all sectors, including communities, into relevant national development plans
- Ensure that the NAP adequately covers land degradation issues in the Outer Islands
- Develop a national landuse framework to coordinate landuse utilization and management and overall promotion of sustainable land management practices
- Develop and strengthen policies and coordination between relevant stakeholders for consolidated and effective management of natural resources, ecosystems and land degradation
- Review existing legislation and policies to provide for specific mention of the need to operate development within the framework of sustainable land management and to ensure SLM issues are recognized in sectoral management plans.
- Improve capacity of people and institutions thru knowledge sharing, training, technical capacities, suitable Sustainable Land Management practices including policy reform to support the full integration of Sustainable Land Management practices into national policy and plans
- Develop media and communications strategy to increase exposure and awareness of land degradation issues to local communities and target the mainstreaming of land deg and SLM into sectoral planning
- Incorporate sustainable land management issues into educational curricula as teaching subject areas at all levels.
- Develop project proposals based on the findings of the NAP, NCSA and NESAF, targeting on-the-ground projects for land degradation and sustainable land management, including capacity building and promote widely to donor agencies and Government.

Thematic Area: Management of Information and Technical Capacities

It is essential to have accurate and reliable information on land resources in order to mainstream land degradation and sustainable land management into national, institutional and community planning and decision making. There is currently poor access to relevant scientific-based and local information on the capacities and suitability of soils and catchments to suit land use decisions from current development pressures. Like many Pacific Island Countries, there has been some assessment work on geological and soil landscapes in the southern islands of the Cook Islands. However little of this information has been enhanced for contemporary resource use and land use decision-making. There is little data available on the extent and character of land degradation in the Cook Islands. Human resource skills and experience in SLM is limited to land management and limited GIS expertise in the Ministry of Works, water engineering (Water Works), agricultural extension, food security and crops in the Ministry of Agriculture, and environmental assessment and conservation within the National Environment Service. [6]

Root Causes

- Limited capacity and insufficient and scattered baseline data to assess integrity of natural resources and ecosystems
- Limited capacity to consolidate available information into a database or land information management system to support informed decision making
- Poor cooperation and collaboration amongst owners of information or different sectors of Government due to lack of incentives

[6] McIntyre, M. (2007) – Excerpt from 'Capacity Building for Sustainable Land Management in the Cook Islands', GEF Medium Sized Project Proposal

- No agency mandated to facilitate the collection and management of information of land and natural resources
- Lack of legal and policy recognition of the need to organize land resource information in a central repository
- Insufficient awareness and support by decision makers and information owners of the need for consolidated and sustainable management of information on land resources
- Weak reporting and monitoring capacities for drought and land degradation at all levels.
- Absence of hard data on land degradation problems in the Cook Islands

ACTIONS:

- Undertake an assessment of available data to determine data gaps and information needs for natural resources, ecosystems and sustainable land management
- Strengthen the capacity of existing agencies responsible for natural resources in data collection, analysis, reporting
- Strengthen the capacity of the designated agency to facilitate and manage a central land and resource information system that is accessible by all stakeholders
- Develop and implement monitoring and data collection programmes for natural resources, ecosystems and land information
- Formal and informal training and skills development of national and community level personnel for resource use planning methods, techniques, approaches and systems; GIS development; resource inventory methods; multi-criteria and objective based planning; ecosystems approaches to land use planning; land capability/suitability methods; and, integrated catchment and coastal zone approaches.

Conclusion and Next Steps

This thematic exercise provided detailed analysis of capacity constraints and problems within the thematic areas of biodiversity, climate change and land degradation, and identified root causes for these problems. Actions have been proposed to address these root causes.

The next phase of the NCSA Project involves the in-depth analysis of cross cutting thematic areas, in much the same way that the Thematic Assessment was prepared. This includes cross cutting environment issues such as Water Resource Management, and Waste, Pollution and Sanitation, and cross cutting capacity issues such as Education and Awareness and Information Management and Exchange. The key output in this phase will be the Cross Cutting Report.

Actions presented in this Thematic Assessment and in the Cross Cutting Report will form the basis for the final phase of the NCSA project – the capacity building and development Strategy and Action Plan. This action plan will provide a framework for implementing priority actions to strengthen capacity for the implementation of activities related to biodiversity, climate change, land degradation and cross cutting areas while strengthening the coordination and collaboration of efforts for environment management and sustainable development.

References:

Butler, D. (2003). Cook Islands Government Enabling Activity for Biodiversity Project (NBSAP). UNDP, Samoa.

Carruthers, P. (2004). Climate Change: National Capacity Self Assessment Report. National Environment Service. Government of the Cook Islands

Carruthers, P. (2004). Climate Change Country Report Presentation. National Environment Service. Government of the Cook Islands

Carruthers, P (2003). Draft National Implementation Strategy. National Environment Service, Government of the Cook Islands.

Carruthers, P. & Apera. E. (1999). Mangaia Vulnerability and Adaptation Assessment Report. PICCAP Programme. Government of the Cook Islands.

de Romilly, G, Manarangi-Trott, T. Matepi, M. and Tiraa-Passfield, A. (2005). Volume 1: Review of Legal and Institutional Frameworks, Legal and Institutional Strengthening of Environmental Management in the Cook Islands. (ADB TA 4273-COO). National Environment Service, Government of the Cook Islands.

FORSEC (2005). Draft Pacific Plan for Strengthening Regional Cooperation and Integration. Pacific Islands Forum Secretariat.

Fullerton, R. (2001). Review of the Research and Development Programme of the Cook Islands Ministry of Agriculture. Ministry of Agriculture. Government of the Cook Islands.

GEF. (2005). The Global Environment Facility. Brochure: GEF. www.gef.org

GEF/UNITAR (2001). A Guide for Self-Assessment of Country Capacity Needs for Global Environmental Management: GEF Secretariat. Washington D.C.

GEF Global Support Programme 2005. Resource Kit for National Capacity Self-Assessment. United Nations Development Programme.

Hajkowicz, S. and Okotai, P. (2005). An Economic Valuation of Watershed Management in Rarotonga, the Cook Islands: National Environment Service, Government of the Cook Islands.

Lynch, P., Moekaa, M., & de Romilly, G. (2005). Conventions, Agreements and Treaties Relating to the Environment. National Environment Service. Government of the Cook Islands.

McCormack, G. (2002). National Biodiversity Strategy and Action Plan. NBSAP Committee. Government of the Cook Islands.

McIntyre, M. (2007). Capacity Building for Sustainable Land Management in the Cook Islands, GEF Medium Sized Project Proposal

Munro, E. (2003). Biodiversity Report 2003. National Environment Service, Government of the Cook Islands

PICCAP Cook Islands, (1999). Initial National Communications under the UNFCCC. PICCAP, Government of the Cook Islands.

Preventive Infrastructure Master Plan. (2006). Strengthening Disaster Management and Mitigation (ADBT A 4605-COO). Government of the Cook Islands.

Rongo, T (2003). Cook Islands National Report to the Convention to Combat Desertification (Land Degradation). National Environment Service. Government of the Cook Islands.

Saul. E., Tiraa, A. (2004). Proposed Natural Areas in the Cook Islands within a Proposed National System. National Environment Service. Government of the Cook Islands.

Sem, G., Upoko, T. (2005). Project Proposal for Second National Communication of the Cook Islands under the United Nations Framework Convention on Climate Change (UNFCCC). National Environment Service. Cook Islands Government.

Te Kaveinga Nui, Pathway for Sustainable Development in the Cook Islands – National Sustainable Development Plan 2007-2010. (2007).Government of the Cook Islands

Te Au Akakoro'anga Akapu'apinga o te Basileia – National Millenium Development Goals Report (2005). Government of the Cook Islands

Turia, G. (2004). Survey of Baseline Information for Assessing the Capacity Building Needs of the Cook Islands for the Safe Management of GMO's, National Environment Service, Government of the Cook Islands.

United Nations. (Dec 2003). Convention on Biological Diversity: Text and Annexes, Secretariat of the Convention on Biological Diversity, UN.

United Nations. (1999). Programmes for the Sustainable Development of Small islands Development States, Barbados 1994. UN

United Nations (2005). UN Convention to Combat Desertification: Text with Annexes. Secretariat of CCD. United Nations.

UNFCCC Int. (2005). News release: World Event Marking the Kyoto Protocol Entry into force... www.unfccc.int.

Upoko, T (2004). National Environment Strategic Action Framework (NESAF). National Environment Service. Government of the Cook Islands.

Upoko, T (2006). Third National Report to the UNCCD. National Environment Service. Government of the Cook Islands.

Wade, H. & Johnston, P. (2005) Pacific Regional Energy Assessment 2004 : An assessment of the key energy issues, barriers to the development of renewable energy to mitigate climate change, and capacity development needs to removing the barriers : Cook Islands National Report , Apia, Samoa : SPREP.

Wilton & Bell PTY. Ltd. (1987). Avatiu Harbour Western Side Development Study: Final Report. Government of the Cook Islands.

Steering Committee. (2001). Hurricane Sea Surge Protection-Design and Costs: Avarua/Avatiu Commercial and Government District, Rarotonga, Cook Islands. Government of the Cook Islands

Annexes:

Annex 1: Key Stakeholders Consulted including Technical Working Group members

This report was compiled with the assistance of the following experts:

Key NCSA Stakeholders and Institutions Consulted				
#	**Official**	**Designation**	**Institution**	**Area of Expertise**
1	Vaitoti Tupa	Director	National Environment Service	Environment policy
2	Tania Temata	Manager – Island Futures Division	National Environment Service	All MEAs, Environment Policy
3	Pasha Carruthers	Climate Change Technical Advisor	National Environment Service	Climate change
4.	Vavia Vavia	Manager – Advisory and Compliance Division	National Environment Service	EIAs, Compliance and Enforcement
5	Elizabeth Munro	Biodiversity Conservation Unit	National Environment Service	Biodiversity
6	Joseph Brider	Senior Compliance Officer	National Environment Service	EIA Compliance and Enforcement, Biodiversity
7	Antoine Nia	Senior Compliance Officer/ ODS Officer	National Environment Service	EIA Compliance and Enforcement, ODS
8.	Arona Ngari	Director	Meteorological Service	Climate change & observations
9.	Mata Nooroa	Director	Energy Division – MOT	National Energy Policies
10.	Tangi Tereapii	Energy Planner	Energy Division - MOT	National Energy Policies and needs
11.	Gerald McCormack	Director	Natural Heritage Trust	Biodiversity
12.	Tuaere Tangianau	(former) Chief of Staff	OPM (Prime Minister's Office)	National Policy
13.	Maria Tuoro	Policy Officer	OPM (Prime Minister's Office)	National Sustainable Development Plan, MDGs
14.	Charles Carlson	Director	Emergency Management Cook Islands	Disaster Management, Preparedness
15.	Donye Numa	Officer	EMCI/OPM (Prime Minister's Office)	Disaster Management, Climate Change
16.	Nga Mataio	Head of Ministry	Ministry of Agriculture (MOA)	Agriculture policy
17.	William Wigmore	Director of Research	Ministry of Agriculture	Agriculture Research and activities
18.	Ngatoko Ngatoko	Policy officer	Ministry of Agriculture	Quarantine and Biosecurity
19.	Pavai Taramai	Quarantine Officer	Ministry of Agriculture	Biosafety framework
20.	Ian Bertram	Head of Ministry	Ministry of Marine Resources (MMR)	Marine & fisheries resources management
21.	Peter Graham	Director – Legal and Policy Division	Ministry of Marine Resources	Marine legislations and policy
22.	Kori Raumea	Acting Director – Inshore Fisheries Division	Ministry of Marine Resources	Inshore fisheries
23.	Ata Herman	Head of Ministry	Ministry of Works (MOW)	Infrastructure development, land use, coastal processes, engineering
24.	Ben Parakoti	Director	Water Works Dept.-MOW	Water resources management
25.	Keu Mataroa	Senior Executive Officer	Ministry of Works	Infrastructure policies
26.	Tekao Herrmann	Director Waste Management	Waste management Department-MOW	Waste management

27.	Paul Maoate	Water Works officer	Water Works Dept. – MOW	Water demand and capacity
29.	Garth Henderson	Manager	AMD-MFEM	Aid funds administration
30.	Taggy Tangimetua	Chief Statistician	STATS-MFEM	Environment related statistics
31.	Tuaine Teokotai	Public Health inspector	Ministry of Health	Public health policies, sanitation, waste
32.	Jacqui Evans	Public Health Planner	Ministry of Health	Public Health policies
33.	Myra Moekaa	International Adviser	Ministry of Foreign Affairs & Immigration	MEAs Official focal points & negotiations GEF Political Focal Point
34.	Otheniel Tangianau	Head of Ministry	OMIA (Outer Is.)	Outer Islands development policy
35.	Apii Timoti	Director	Te Aponga Uira (TAU)	Energy generation/needs
36.	Teresa Manarangi- Trott	President	Cook Islands Chamber of Commerce	Climate change, Private sector interests
37.	Tom Wichman	Energy and Technology Development Consultant	Private Sector	Waste management/ GHG inventory
38.	Ian Karika	Chairman – Rarotonga Environment Authority President – Te Ipukarea Society Title? – Takitumu Conservation Area	REA/TIS/TCA	Biodiversity, Species conservation Environment policies, Compliance & Enforcement
39.	Imogen Ingram	President	Island Sustainability Alliance Cook Islands (ISACI)	Environment Education & awareness Climate Change, Persistent Organic Pollutants
40.	Charlie Numanga	Red Cross Officer	Cook Islands Red Cross	Community Adaptation and Risk Management
41.	Vereara Maeva Taripo	President	Cook Islands Association of Non Government Organisation (CIANGO)	NGO environment related policies
42.	Mona Matepi	Project officer	WWF Cook Islands	Environment education & awareness
43.	Nandi Glassie	(former) Acting Chief of Staff	OPM (Prime Minister's Office)	National Policy
44.	Gerard Miles	Senior Project Manager	Cook Islands Investment Corporation	National capital projects development programmes
45.	Metuatini Tangaroa	(former) Inspector - National Disaster Management Office	Cook Islands Police	Disaster response & preparedness
46.	Trina Pureau	(former) Tourism Officer	Tourism Cook Islands	Tourism environment initiatives
47.	Rairi Rairi	(former) Head of Ministry	Ministry of Internal Affairs	Internal affairs, Outer Islands
48.	Metuatini Tangaroa	(former) Director	National Disaster Management Office	Disaster Management and Response
49.	Noelene Browne	President	Avana Muri Marine Awareness Group (AMMAG)	Community environment advocacy & awareness programme
50.	Ken Matheson	(former) Head of Ministry	Ministry of Education	Environment Education
51.	Ms Ana Tiraa-Passfield	Private Citizen		Biodiversity Expert
Outer Islands – Mangaia Stakeholders				
52	Tuaine Tuara	Island Secretary	Mangaia Island Administration	Mangaia development policies
53	Alan Tuara	Coordinator	Tangaeo Rangers	waste management, community education & awareness
54	Mataora Harry	Chairman – Aronga Mana	Mangaia Aronga Mana	Traditional leaders islands wide policies, biodiversity, community projects

55	Ngarangi Tuakana	Senior agricultural officer	MOA	Biodiversity, agriculture, livestock
56	Anthony White	Manager	Mangaia Energy	Mangaia Energy, hybrid wind turbine project
57	Tuaiva Mautairi	Kavana-Veitatei	Mangaia Aronga Mana	Traditional leaders islands wide policies Biodiversity, community environment projects
58	Unlucky Tungata	Director	Mangaia Economic Development	Natural resources management
Outer Islands – Aitutaki				
59	Bobby Bishop	Environment officer	NES	All MEAs
60	Aisnes Lawton	Women's Representative Business woman	Aisnes stall - Market	Women's issues, lagoon monitoring, tours, sport fishing
61	Tepaeru Cameron	Waste management	Aitutaki Island administration	Waste management project
62	Rimaroa Tuiravakai	Manager	Aitutaki Energy	Aitutaki Energy needs
63	Tukua Upokomanu	Manager	Aitutaki water	water resources management
64	Fred Charlie	Director	Aitutaki -MOA	agriculture
65	Sabati Solomona	Island Secretary	Aitutaki Island Administration	Aitutaki development policies
66	Teaea Parima	Principal	Araura College	School curriculum
67	Temanu Unuka	Deputy Mayor	Aitutaki Island Council	Aitutaki Islands development projects
68	Mauke Mauke	Chairman-facilitators	CBDAMPIC – Aitutaki pilot project	Climate change adaptation community project

National Environment Service
PO Box 371, Avarua, Rarotonga, Cook Islands
Fax +682 22-256, Phone + 682 21-256
Email: resources@environment.org.ck
Website: www.environment.org.ck