

**NATIONAL ASSESSMENT REPORT TO THE
WORLD SUMMIT ON SUSTAINABLE
DEVELOPMENT 2002**

NIUE

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FOREWORD

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CONTENTS

	Page
Executive Summary	3
1. Introduction	
1.1 Introduction to the WSSD	3
1.2 Methodology	3
1.3 Pacific Regional Submission to the WSSD	6
2. Sectoral Review	
2.1 Environment	7
2.2 Health	7
2.3 Public Works	7
2.4 Fisheries	8
2.5 Agriculture	9
2.6 Forestry	9
2.7 Justice, Lands & Survey	10
2.8 Education	10
2.9 Meteorology	11
2.10 Tourism	11
2.11 Economic Sector	12
2.12 External Affairs	14
2.13 Community Development & NGOs	14
3. Legislative Review	15
4. Environmental Concerns	
4.1 Marine: Oceans/Coastal waters/Reefs	16
4.2 Water Supply and quality	21
4.3 Waste management	24
4.4 Terrestrial Habitats and Species	27
4.5 Agriculture	34
4.6 Forestry	37
4.7 Climate change	39
5. Social Concerns	
5.1 Institutional frameworks and capacity building	42
5.2 Planning and environmental impact assessment	44
5.3 Legislation	45
5.4 Education and public awareness	47
5.5 Traditional knowledge and systems	49
6. Economic Concerns	
Population; Relationship with New Zealand; Land tenure system; Technology	50
References	51
Other literature reviewed	53
Appendix 1: Workshops for Civil Society	55
Appendix 2: Departmental consultations	58
Appendix 3: Changes to Legislation 1990-2001	72
Appendix 4: Niue Island Tourism Accreditation Scheme	74
Appendix 5: Goal & objectives of Environment Unit Plan 2000-2001	75
Appendix 6: Terms of Reference WSSD Coordinator	76

EXECUTIVE SUMMARY

SECTION 1: INTRODUCTION

This report has been the result of national efforts towards preparations for the WSSD. It has culminated in extensive consultation with civil society as well as government stakeholders. It has been prepared by the WSSD coordinating team.

This report has been supported by an IWP consultancy having recognised the needs of an IWP and WSSD report being the same. To that end, an international consultant was contracted by IWP to assist in identifying the national environmental concerns.

1.1 Introduction to the WSSD:

It is ten years since the United Nations Conference on Environment & Development (UNCED), or first Earth Summit, held in Rio de Janeiro in 1992. The 2002 Summit is being organised to undertake a comprehensive review and assessment of progress in the implementation of UNCED commitments. Regional and national assessments are being undertaken to facilitate that. This report is to contribute to Niue's national assessment by identifying its priority environmental concerns, the key issues and their context, including past work and outlining future planned work to address these.

1.2 Methodology:

The report's information are drawn from three main sources:

1. WSSD Workshops conducted with representatives of the wider community (Civil Society) by the Environment Unit on 8th -12th November 2001
2. Consultations with key Government agencies during the week of 3-7 December 2001
3. A literature review
4. Two consultations with Government Stakeholders to review the draft report
5. Additional comments, alternative or amended texts received from the Government agencies on drafts of this report.

1/ WSSD Workshops with Civil Society:

Appendix 1 details the attendees at these workshops, the procedures followed and the results of the discussions. The basis of the agenda was a questionnaire, worked through by the organisations represented, summarising any activities undertaken to address the issue of sustainable development and the constraints or obstacles perceived. This was divided into 3 sections Environment, Social and Economic, subdivided as follows:

1. Environment
 - 1.1 Conservation activities (e.g. marine protected areas, forest protected areas, animal sanctuaries)
 - 1.2 Pollution & waste management
 - 1.3 Climate change
 - 1.4 Sustainable natural resource management
 - 1.5 Others

2. Social
 - 2.1 Promoting participation of various sectors of community in sustainable development
 - 2.2 Addressing basic needs (e.g. organic food, access to clean water, sanitation)
 - 2.3 Promoting peace, justice, rule of law and human security
 - 2.4 Others
3. Economic
 - 3.1 Poverty alleviation (e.g. income-generating projects, micro-finance)
 - 3.2 Promoting or implementing economic policies that promote sustainable development.
 - 3.3 Others

Groups were also asked to list five priority issues they deemed critical at the national level. In addition, the groups were asked to make appropriate recommendations of initiatives to address the priority concerns.

2/ Consultations with Government Agencies:

Appendix 2 lists the staff consulted in the different agencies and provides notes on the meetings. In each case, Departments were asked to identify their priority environmental concerns (or identify strategies or plans expressing these) and to document past plans and activities addressing environmental issues.

3/ Literature Review:

The bibliography lists the literature reviewed during the 3-14 December visit. The Country Report for UNCED provides a baseline for the situation at the time of the first Summit (Government of Niue, 1991). Two key documents then provided more detailed assessments of environmental concerns that were used as the framework for this report, the State of the Environment Report of Niue (Lane, 1994) and National Environmental Management Strategy of Niue (NEMS) (SPREP, 1994). A review part of the way through the decade since the Country Report to the Capacity Building supplies Rio for Environmental Management in the Pacific project (Pasisi, 1998), which, identifies specific sector capacity needs. Finally, the recently completed National Biodiversity Strategy and Action Plan (NBSAP) (Government of Niue 2001) serves as a very recent assessment of issues with a focus on biodiversity conservation. The actions identified within it are current and thus have been directly carried forward into 'work required' under the different environmental concerns (Section 3).

An assessment undertaken by SPREP (Peteru, 1993) in 1992 provides a baseline against which to identify progress in the provision of legislation affecting the environment and sustainable development. The extent to which environmental concerns have been reflected in new laws or regulations since then is available. A list of legislation, which has been updated and new regulations/legislation introduced to Niue between 1900 and 2001 is provided as Appendix 3. Legislation is also covered under each environmental concern in Section 3.

Section 3 summarises the information from the above three sources under different environmental concerns such as Marine, Terrestrial Habitats, Terrestrial Species, etc. Four headings are used for each concern:

- ‘Concerns Identified’ – listing all the issues identified from the three sources
- ‘Progress since 1992’ – listing progress made within different topics such as legislation, planning, field programmes to assess, for reporting to the WSSD, progress since the previous Earth Summit
- ‘Work still required’ – as identified from the three sources
- ‘Discussion’ – brief discussion provided in context of each section

Two meetings were held with representatives of Government Agencies to review drafts of the report. Given the unique approach to the preparations for national WSSD, which were simultaneous to the needs of IWP, the original draft of this report was a combined effort. Subsequently, government stakeholders in order to consolidate information provided and address any gaps remaining in the draft report. Hence, the earlier drafts to this report were called an IWP/WSSD Assessment of Environment Concerns.

This process of review was supported further by contributions to fill gaps identified. Both consultations were therefore facilitated by the IWP and WSSD coordinating teams. Finally, all further contributions to the document were facilitated by the WSSD coordinating team.

1.3 Pacific Regional Submission to the WSSD:

This regional submission is introduced here as relevant to the WSSD part of the report. It was produced from a fully participatory and transparent process involving all Governments of the region was conveyed to the Asia-Pacific Preparatory Meeting by the Chairperson, Pacific Region Multi-stakeholder Consultations in September 2001. Its vision is as follows:

‘Achieving measurable sustainable development in the Pacific region towards improving the quality of life for all.’

The submission sought initiatives under seven headings:

- Oceans
- Natural Resources
- Climate Change and Variability and Sea Level Rise
- Islands Vulnerability
- Energy
- The People
- Capacity Building

SECTION 2: SECTORAL REVIEW

This section pulls together information on the roles the different departmental agencies play in environmental management and sustainable development from reviewing their corporate plans, annual reports or other documents, and from consultations with them. It also briefly summarises the environmental concerns raised in their reports and consultations. [Finally, it considers the economic sector and the work of the Economic, Planning and Development Unit which underpins the activities of all Government Agencies.](#)

2.1 Environment:

The Environment Unit's plan for 2001/02 (Appendix 5) has a goal of 'effectively managing our natural resources whilst promoting sustainable practices to ensure inter-generational equity.' Its objectives (listed in full in Appendix 5) consist mostly of implementing environmental programmes or strategies, largely reacting to different regional and international activities. Among its immediate priorities is maintaining the Huvalu Conservation Area Project, following the end of the South Pacific Biodiversity Conservation Programme that initiated it. Overall, the lack of enacted legislation in the environmental area is seen as a major problem. Some proactive work is taking place in community education but more needs to be done. New concerns that have come to the fore recently are the protection of traditional resources, access to genetic resources and benefit sharing

2.2 Health:

The Department of Health's Corporate Plan (2001-03) includes an outcome statement to ensure that 'the environment is healthy and the underground water is clean and safe. The Division that would include current responsibility for implementation of this is the Health Improvement Division, which has been formed from a re-established Moui Olaola with NZODA-assistance, following three years of support up to 1999 from Aus-Aid under its 'Healthy Islands' concept. However, a larger Public Health division is planned bringing several activities under one umbrella including implementing waste management programmes and monitoring the quality of underground water (Department of Health 2001). It also aims to promote the concept and usage of Traditional Medicine, which should assist the conservation of native plants. A budget of \$5,000 for "Healthy settings and environment" is programmed for 2002-03.

2.3 Public Works:

The Water Supply Division is the key one with some environmental focus, through its goal of providing 'good quality, adequate, continuous and sustainable supply of water to the public'. Its 1999/2000 report expresses concerns that water quality tests were only being done quarterly by the Health Department and only for biological contamination. Funds are thus being sought for a test kit including chemical analyses. Having two departments involved in the water resource created challenges of communication and

budgetary control. The Division looked forward to assisting Health in its waste management programme where it affected the water supply. Its Corporate Plans include the promotion of water conservation and ensuring the sustainable use of water resources among the objectives. The Civil Construction Division manages the bulldozers for land clearance and identifies that it works closely with the Moui Faka Niue scheme and the Growers Association, but it does not record any environmental objectives.

Consultation with staff (Appendix 2) revealed a number of environmental concerns particularly in relation to maintaining a clean water supply and the risks to this from sewage, pesticides and fertilisers, and dump leachates. Septic tanks can be a particular problem and some improvements to the existing designs are expected under the auspices of a recently funded US-funded Disaster Management project.

Other concerns involved land clearance including the use of larger bulldozers and excessive new roading for plantations whose produce sometimes finds no market.

2.4 Fisheries:

The DAFF 2001/02 Corporate Plan defines the Department's goal as 'to promote and protect the development of an environmentally sustainable and viable Agriculture, Forestry and Fisheries sector in Niue. The overall goal of the Fisheries Division is to promote fisheries development on a sustainable and environmentally sound basis for both inshore and offshore marine resources through:

- Appropriate research and management;
- Monitoring, control and surveillance;
- Extension services and,
- Domestic industry support

Key objectives in the fisheries sector include improving the effectiveness and quality of the service to fishermen while promoting the sustainable use of the resource, and exploring the possible use of offshore resources. Its Fisheries Research programme includes the deployment of fish aggregating devices (FAD's), monitoring the performance of introduced trochus shells, studies of the offshore fishery and monitoring of the marine reserve. Its Fisheries Extension Services programme includes measures to ensure the safety of fishermen, including the enforcement of associated legislation, and surveillance of the Exclusive Economic Zone (EEZ).

The key issue identified in departmental consultations was the unsustainable use of inshore fish resources, coupled with the lack of baseline information on these. Other concerns include possible pollution from land-based sources also from visiting boats. A more recent concern is that of ciguatera poisoning. Two offshore reefs are poorly known and could provide resources that need to be managed sustainably and be protected. The country's one marine reserve, at Anono, appears to be effective though it is a concern that it is not yet backed by legislation. Protecting further areas, perhaps using traditional methods, is a priority.

2.5 Agriculture:

The DAFF Corporate Plan identifies the following different agricultural programmes: Crop Research, Extension Services, Agricultural Marketing, Plant Protection, Quarantine Services, and Livestock Production. The first two aim to support growers by developing new crops (e.g. vegetables) and supporting current ones like taro, coconuts and vanilla, seeking sustainability by improving soils, promoting organic farming and providing irrigation. The marketing effort is largely focused on taro, yams and vegetables. Plant protection and quarantine play key roles in environmental protection, controlling invasive species and other pests (including feral pigs), regulating the use of pesticides and providing border control to prevent the arrival of new pests. The focus of the livestock programme is largely on animal health.

Key concerns identified during consultations were that the past focus of many programmes had been on income-generation rather than sustainability. Resources are not used in an optimum way, e.g. more forest having to be cut down because some farming methods did not sustain the soils. Inappropriate crops (such as limes and passion fruits) requiring high inputs of pesticides were developed in the past.

2.6 Forestry:

The forestry sector has been the subject of a major review leading to a Forest Policy, which has been approved by Government. An NZODA-supported forestry project began in 1992/93 with the aim of planting 100 ha of plantation forests a year. However, problems leasing land and poor growth rates due to poor soils have led to a shift in focus towards sustainable indigenous forest management and agro-forestry. This is reflected in the objectives of the Forest Policy, which include;

- Promoting the sustainable use of Niue's indigenous forest and assisting communities to manage these as a renewable resource;
- Supporting customary conservation practices and community-based conservation areas;
- Promoting integrated land use practices to reduce the need to clear more forest;
- Developing a sustainable local timber industry; and
- Promoting plantation forestry within communities with emphasis on indigenous species and agro-forestry.

Previous environment reports have assumed that deforestation is a major environment concern for Niue. These are assumptions that were made by several international consultants in relation to their consultation with misinformed public. In 1994, the NZODA sponsored a Forestry Project, which undertook to try to validate the assumption made by these reports by conducting a forest cover inventory program using satellite spot imagery mapping. To enable the Forestry Division to correctly determine the assumed effect of deforestation, it was necessary to use the same system of satellite spot imagery mapping 6 years later to compare the detrimental effect of deforestation. This was again

conducted in 2001. At that time, an active Moui Faka Niue taro export scheme was quite evident and considerable amount of area was cleared for taro plantation. Recent data after some preliminary assessment suggest and may disprove these assumptions of deforestation as being a serious environment concern for Niue. The problem may be the over cropped of existing agricultural areas, which leads to shorter rotation period affecting the fertility status of these areas.

2.7 Justice, Lands & Survey:

The Department's corporate plan 1999-2002 (DJLS, 1999) includes several key objectives of relevance to the environment and sustainable development as:

- Provide the Government of Niue with the institutional capacity for the planning and management of all uses of natural and cultural resources
- Formulate land and resource use policies, strategies and guidelines for co-ordinating sustainable development
- Ensure integrated decisions relating to planning and land management, resource use and conservation
- Provide reliable land and environment related information.

Among its key outcomes is the "Effective and efficient use of Niue's resources within a sensitive environment".

Its Resource Use Planning Unit has among its objectives the following:

- Provide a legal framework with an emphasis on cooperative mechanisms to achieve optimal environmental outcomes, supported by strong enforcement measures if required
- Incorporate environmental accountability into the formulation and approval of resource development
- Facilitate community awareness towards the sustainable management and use of natural resources
- Assist with the enhancement and integration of multi-disciplinary and multi-faceted environmental information
- Assist with ongoing training in use of tools for environmental assessment, management and planning

During consultation, (Appendix 2) emphasis was placed on the importance of integration, both of information and of the country's efforts towards sustainable development.

Proposals are being developed for a larger server-based computer set-up with a geographically-based database of all information relating to land that will be networked both internally and externally.

2.8 Education:

There is no specific reference to environmental matters in the Department of Education's Corporate or Departmental Plans sighted (1993-94, 1996-97, 1999-2000, 2001-02) or Annual Reports (1993, 1994, 1999). One consistent goal has been to develop respect for the diverse ethnic and cultural heritage of the Niuean people, which could include their

environment. However, it is clear from consultation with the Director (Appendix 2) that environmental issues have become more prominent in recent years.

2.9 Meteorology:

The Meteorological Service's Corporate Plan 1999-2000 identifies safeguarding the environment and contributing to sustainable development as two of its key objectives. Weather forecasting and in particular, the early warning of cyclones can assist in the short-term management of natural resources. Past weather data can aid medium-term planning, e.g. in determining possible future sustainable crops. Monitoring of climate change can assist long-term planning allowing prediction and identification of new threats to sustaining the environment.

The Climate Change report (Government of Niue 2000) identifies a range of potential impacts of climate change on the natural environment, economy, human health and social activity. These include:

- Damage to reefs and coastal processes associated with any increased frequency and severity of cyclones
- Greater contamination of the freshwater lens with sea water associated with any sea level rise and with pollutants associated with any increased rainfall
- Impacts on crops and livestock from any increased frequencies of climate extremes, e.g. cyclones, drought, prolonged rainfall, including increases in diseases and insect pests
- Environmental conditions becoming less suitable for some native animals and plants and increased losses associated with any increased frequency of cyclones
- Possible reductions in the freshwater supply available in the lens if droughts become more frequent than periods of heavier rainfall
- Risks to human health from any increase in mosquito-borne diseases
- Changes in fish stocks associated with any changes of current patterns and increased risks of ciguatera poisoning which has been thought to be caused by disturbance to the reefs

During consultation an additional environmental issue was identified; the disposal of instruments containing mercury, an acute toxin.

2.10 Tourism:

The Niue tourism industry is coordinated by the Niue Tourism Office, which was re-established under the Niue Tourist Authority Act of 1995. The country is marketed to the global tourism industry as a "soft adventure destination", concentrating on niche markets such as diving, fishing, sports, people and culture, and eco-tourism, primarily for visitors from New Zealand & Australia. Many of the scenic sites and sea tracks are privately owned and their use for tourism depends on the goodwill of owners.

The role of the Niue Tourism Office is to ensure that promotion and marketing of Niue does not conflict with the national goals and strategic plans of the country. Recognition

of the importance of the environment to tourism led to the drafting of an Accreditation Scheme for the tourism industry, incorporating Environment Management Guidelines to be followed by those participating in the Scheme. These Guidelines are reproduced in Appendix 2. Two objectives in the Niue Tourism Charter specifically relate to environmental responsibility. These are:

- To adopt environmental friendly-type practice to minimize exploitation of natural resources and to reduce adverse effects on the environment.
- To maintain and enhance the natural beauty of Niue.

Key concerns identified within the guidelines are waste management (including hazardous substances and discharges), freshwater resources, energy, and impacts on natural ecosystems.

2.11 Economic Sector

The Economic, Planning and Development Unit was re-established within the Premier's Department in 1994, and at the same time the Government developed a set of goals and related strategic development strategies within a National Development Strategy. The goals within the Niue Integrated Strategic Plan, 1999-2003 are as follows: -

- Fully develop sovereignty-based assets and/or opportunities within a framework consistent with international guidelines.
- Develop and maintain an infrastructure sufficient to support private sector development.
- Develop or hire appropriate human resources to support private sector development.
- Develop opportunities for economic assistance ensuing from Niue's growing international personality.
- Attract sufficient capital to finance the growth and operation of the private sector.
- Develop a streamlined, efficient government sector that fulfils an efficient support role for both the public and private sectors.
- Attract sufficient numbers of residents and visitors to guarantee a viable population on Niue.
- Preserve the environment and biological diversity so that they may continue to support both the resident population and the private sector in the long term.
- Conserve and respect the unique culture and social values of Niue.
- Establish a Trust Fund.

The most recent Niue Economic and Social Review (revised in February 2002) summarises the contribution of different sectors to GDP. The Government Sector (Public service and government trading enterprises) accounts for the largest proportion at approximately 47.9%, wholesale and retail trade for 9.3%, while other services, including hotels and restaurants, transport and communications, and community and personal services accounted for approximately 11%, up from 8% in 1990 (driven by moderate growth in trade and tourism related services). The construction industry contributed 4.2 % to GDP in 2000 and the financial services sector contributes approximately 7%.

In terms of developing the service sector, tourism and offshore financial services offer the best potential for further (private enterprise) development – although both are currently experiencing problems. The tourism sector was a focus of NZODA support with funds for marketing and promotion but this work has been suspended due to the absence of sufficient air-services to the island. At present, the industry is served by only one airline (Royal Tongan airlines) that provides two scheduled flights a week to Niue – involving a one night ‘stop-over’ in Tonga. New Zealand has funded an airline consultant in a bid to acquire a dedicated service between Auckland and Niue – but so far, all attempts have proved futile. A prolongation of the disruption of air-services to Niue could, in all likelihood, lead to the complete collapse of the tourism industry.

The agricultural, fisheries and forestry sector accounts for approximately 35% of national output and income – although the vast bulk of this output is household subsistence production (more than 97%). The limited amount of fertile or cultivatable land, lack of surface water and susceptibility to drought conditions hinder development of agriculture. Cyclones are also a major problem. The export market of perishables is however, hampered by the lack of adequate shipping facilities. The country is serviced by a twice-monthly shipping service from Auckland.

A recent report on the fisheries sector indicates that the estimated cash value of Niue’s total fisheries production of 115 tonnes/year is in the region of NZ\$1.1 million equivalent to approximately 7% of Niue’s GDP. Notwithstanding this, 80% of this production is the product of subsistence fishing that is domestically consumed and does not enter the cash economy. The current focus of the Fisheries Department is to safeguard the inshore resources from over-exploitation given the level of subsistence fisheries activities. Offshore fisheries have some potential and there is some local interest in developing tuna fisheries for export markets. Nevertheless, the absence of adequate transportation presents problems for the proposed industry. Now the potential of offshore (tuna) fisheries has not been fully identified and/or exploited.

The industrial sector is poorly developed with manufacturing accounting for only 1% of GDP – mainly the production of handicrafts (plaited from pandanus and coconut palm leaves) and small-scale industries including coconut products, honey extraction and bottling, saw milling, joinery, and furniture. Some investment has been made in the vanilla and forestry industries with support from NZODA. The industry has limited potential to expand given the small size of the workforce and constraints on available skills.

The Economic and Social Review identified a range of environmental issues affecting sustainable development on Niue from climate and sea level variability, soil degradation and pollution to resource management. More specific challenges include coastal erosion, water quality, water availability and sanitation. Niue is heavily reliant on diesel fuel to generate energy. The unloading of diesel oil and the storage of waste oil from the power plant also pose potential risks for the local environment. Moreover, the burning of diesel

oil has negative national and global consequences due to the emissions of Carbon Dioxide (CO₂) and other greenhouse gases.

2.12 Office of External Affairs

The office for External Affairs is the designated official contact point for Niue with other governments, as well as regional and international Organisations. The function of the office is to keep government informed of all developments, which may affect Niue economically, socially, and environmentally.

The Office of External Affairs also advises government on any human resource development issues. The Constitution of Niue provides that the Office of External Affairs may request the New Zealand Government assistance in matters concerning defence, security and international law.

External Affairs is responsible for the facilitation of the process of becoming a signatory, accession or ratification to international legal instruments. An external affairs officer is with the Ministry of Foreign Affairs (MFAT) in New Zealand to collate a cohesive list of all legal instruments, which NZ has signed on Niue's behalf. Niue would therefore, be informed of all requirements for compliance to individual Agreements.

SECTION 3: LEGISLATIVE REVIEW

An assessment undertaken by SPREP (Peteru, 1993) in 1992 provided a baseline against which to identify progress in the provision of legislation affecting the environment and sustainable development. The extent to which environmental concerns have been reflected in new laws or regulations since then is variable. Appendix 3 lists the legislation and it is covered under each concern in Section 4. It will be seen that two key pieces of legislation are still awaited, an Environment Bill and an Environmental Planning Act

[This section will either be expanded once Peteru's report is read or dealt with only under the different concerns, or placed in a final discussion].

Text from DAFF re the rev of the Quarantine Act – Biosecurity Act.

SECTION 4: ENVIRONMENTAL CONCERNS

The concerns are listed under the three headings: Environment, Social & Economic used in the Civil Society Consultation (Appendix 1). The format is similar in each case. It begins with a listing of concerns from the literature (from UNCED Report in 1991 to the NBSAP in 2001) and then from this review from consultations with Civil Society and Government departments. There follows a summary of progress since 1992 under a range of headings. Thirdly there is a list of work that has been identified as still required stemming from consultations and the NBSAP.

4.1 MARINE - OCEANS/COASTAL WATERS/REEFS

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- Coral reef depletion due to easy accessibility
- Silting of reefs especially in Alofi area
- Oil spill, especially around the harbour
- Pollution of harbour from visiting vessels
- Illegal exporting of coral
-

SOE 1993

- Fish poisoning (ciguatera) due to disturbances to reef environment
- Over-exploitation of inshore fisheries
- Destructive fishing practices

NEMS 1994

- Lack of knowledge of inshore marine resources
- Land-based activities causing pollution in coastal waters
- Lack of information about the resources of Niue's three distant reefs
- Probable over-harvesting of marine resources
- Destructive fishing practices

CBEMP 1998

- Lack of baseline data to characterise diversity, structure, sensitivities and threats to inshore reef ecology
- Deep sea (ocean bottom) fisheries baseline data and research
- Development of Marine Reserves Policy and implementation strategy

NBSAP 2001

- Lack of sustainable management of marine resources

CIVIL SOCIETY CONSULTATION

One of the ten priority ‘environment’ recommendations from the Civil Society consultations was:

‘**THAT** new protected areas be established for marine and land based natural resources.’

Other concerns raised were;

Marine Reserves:

- Have yearly or two-yearly surveys of Anono reserve to report to communities on progress of reserve and improve awareness of it.
- Establish more marine reserves

Fishing Practices:

- Encourage traditional fishing practices while introducing new environmentally-friendly methods

Regulations:

- Reinforce village bylaws regarding fishing
- Leave under-sized fish
- Re-invigorate public awareness programmes and policing of fisheries regulations

GOVERNMENT DEPARTMENT CONSULTATION

- Unsustainable use of inshore fish resources - no guidelines for their use
- Need for a sustainable management plan for inshore fisheries
- Limited baseline data on inshore fish resources
- Difficulties of enforcing regulations (e.g. size restrictions)
- Pollution from land-based sources and oil spills
- Identification of potential resources of offshore reefs, Beveridge, Harran and Antiope, and ensuring their protection
- Risk of invasive species arriving through ballast water
- Management of offshore fishery
- Develop guidelines for the management of inshore fisheries
- Obtain baseline data on inshore fisheries
- Undertake research on biology of key inshore species to define sustainable catch
- Monitor possible land-based sources of pollution and discharges from boats
- Survey offshore Beveridge, Harran and Antiope Reefs to determine their potential and protect them
- Develop programmes for the community to monitor the resources of the Anono Marine Reserve
- Encourage the application of traditional conservation measures (fono and tapu) to inshore resources

PROGRESS SINCE 1992

International Agreements:

- Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matters 1972
(Controlling sources of pollution of the marine environment and preventing dumping of waste and other matters.)
- Waigani Convention
(Regional convention signed by all Forum countries except Marshall Islands prohibiting the shipment of hazardous wastes from outside Pacific Islands into Pacific Islands.
- Agreement for the Implementation of the Provisions of the United Nations Convention of the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. 1995
(Adopted in 1995 but requires further countries to ratify or accede before it enters into force. It introduces a number of innovative measures obligating States to adopt a precautionary approach to fisheries exploitation and gives expanded powers to port States to enforce safeguards for the proper management of fisheries resources).
- Convention for the conservation and management of highly migratory fish stocks within the Western and Central Pacific. This convention brings the last part of the world into the global system, establishing a Commission.
- Convention for the Prohibition of Fishing with Driftnets, 1989
- Multilateral Treaty on Fisheries between the Governments of Certain Pacific Island States and the Government of the United States of America
- Niue Treaty

Legislation:

- Domestic Fishing Act 1995 & Domestic Fishing Regulations 1996 – addresses destructive practices and over-harvesting, to some extent, through size restrictions, export restrictions
- Territorial Sea and Exclusive Economic Zone Act 1996 – affirms rights of Niue to make provision for conservation and management of resources of its Exclusive Economic Zone (EEZ)
- Territorial Sea and Exclusive Economic Zone (Beveridge Reef Regulation) 1997
- Marine Pollution Act 1975 – including measures to prevent pollution and deal with oil spills

Planning:

- Land & Marine Resources Planning Project
- Tuna and Billfish Management Plan (within EEZ)

Protected Areas:

- Anono (Namoui) Marine Reserve – 27.7 ha registered in 1998

Programmes:

- Fish Aggregating Devices programme to stimulate offshore fishery and take pressure off the inshore one

- Trochus aquaculture programme
- Fish Species Data Collection

Information:

- Fisheries Resources Survey - (Dalzell et al. 1993).
- Surveys of Anono Marine Reserve – SPC & DAFF – 1998 – (Labrosse et al. 1999)
- Niue’s Reef Flat Invertebrate Fishery (Lambeth & Fay-Sauni, 2001)
- Assessment of role of women in fisheries (Tuara, 2000)

Advocacy & Education:

- Participation in regional projects awareness and education campaigns such as ‘Year of the Sea Turtle in the South Pacific’ and ‘Year of the Coral Reef’ through SPREP and the International Coral Reef Initiative, using poster and song competitions, fact sheets, etc.
- Signage and other material in preparation for the Anono Marine Reserve
- Niue Fish Book (in progress)
- Extension and public awareness campaign
- Vocational Youth Training Programme
- Women in Fisheries Programme.

WORK STILL REQUIRED:

NBSAP:

The NBSAP had one theme (Theme 3) devoted to marine issues, but relevant actions were also included under Theme 5 Waste Management, Theme 6 Pests & Invasive Species, and Theme 7 Public Awareness and Education.

Theme 3: Coastal & Marine Biodiversity

Objective 1: Conservation of Biodiversity of Inshore Coral Reefs

Action 1.1 Ensure that the Fisheries Division continues to strengthen the management of inshore marine resources and enforce Legislation and Regulations.

Action 1.2: Consider further regulations to conserve the inshore fishery including:

- To regulate the size of fishing nets that is being used for inshore fishing.
- Discourage the use of fish nets on the reef
- Eliminate the use of fish poisons

Action 1.3: Integrate appropriate traditional fishing and management practices with modern management methods as a means of effectively managing stocks, and educate people in their use.

Action 1.4: Put in place legislation to protect recognized traditional fishing grounds

Action 1.5: Develop a programme to increase the number of Marine Protected Areas in Niue

Action 1.6: Maintain monitoring at Anono Marine Reserve, the Hakupu Heritage Marine Area and other sites.

Action 1.7: Undertake research to identify and document all marine organisms and resources, including assessment of the status of stocks, particularly those of commercial, nutritional, and environmental indicator value.

Action 1.8: Develop and implement a comprehensive inshore fisheries management plan, including assessment and monitoring of offshore reefs (e.g. Beveridge Atoll)

Action 1.9: Develop and improve data collection, survey and monitoring of fisheries resources.

Action 1.10: Continue to promote and develop programs aimed at reducing fishing pressure on inshore fisheries resources e.g. Fish Aggregation Device (FAD) program.

Objective 2: Conservation and Sustainable Management of Off-Shore Fisheries

Action 2.1: Identify and secure funding to support the development and implementation of the tuna and billfish management plan.

Action 2.2: Encourage the Government to carry out a survey and/or feasibility study to assess the value of fisheries for comparison of benefits from foreign fishing vessels fishing in Niue's Exclusive Economic Zone.

Action 2.3: Enforce the appropriate prosecution of all fishing vessels that fish illegally in Niue Waters

Action 2.4: Amend the legislation (TS and EEZ Act 1997 and/or Domestic Fishing Act 1995) as identified in draft management plan, and develop new legislation for the management of offshore reefs.

Action 2.5: Enact the Prevention of Marine Pollution Bill.

Action 2.6: Develop appropriate data collection programs to assist in the effective management of pelagic/offshore marine resources

Action 2.7: Mobilize resources to increase capacity in the area of fisheries management to ensure effective management of fisheries resources on a national, regional and international level.

Action 2.8: Develop guidelines and policies for the development of a commercial offshore fishery to ensure sustainable utilization of resources and to ensure the use of proper and environmentally safe fishing practices.

Theme 5: Waste Management and Water Resources

Objective 5: Minimise Marine Pollution

Action 1: Undertake surveillance of ships to ensure there is no discharge of waste or ballast in Niuean waters and fine polluters.

Action 2: Maintain an active Oil Spill Contingency Plan with appropriate well-maintained equipment held in Niue.

Theme 6: Alien & Invasive Species

Objective 3: Raise Awareness of the risks posed by invasive species

Action 3.1: Produce publicity material for shipping companies and arriving air passengers, identifying the range of potential invasive species in the region and the risks they could pose to Niue's environment and its agricultural, fisheries and tourism sectors.

Theme 7: Education and Public Awareness

Action 4: Provide more information for tourists and Niueans returning overseas on which species are fully protected under CITES which may not be imported into signatory countries (e.g. coral, clam shells, turtle products).

DISCUSSION

Issues regarding the offshore fisheries will not be discussed further here except to note that the SPC have prepared a National Fisheries assessment with options for developing these further (SPC 2000). Currently there is a bilateral agreement with Taiwan covering fishing in the 320,000 sq km of Niue's EEZ though no boats have currently obtained licenses under this agreement. There should be enough information provided above from the NBSAP for the national assessment for the WSSD, including a list of necessary actions. The coastal part of the IWP is the element to be discussed here, to assist the development of a pilot project.

It is clear from the consultations and literature review that the sustainable management of reef and inshore fisheries, and addressing likely over-harvesting within these, is the top priority issue within the marine area. It has been identified from the UNCED report onwards. Some progress has been made, such as the regulations covering quotas and minimum size classes' species, but these were based on overseas provisions and their appropriateness to the Niuean situation still has to be assessed (B.Pasisi, pers. comm.). This issue assumes particular priority because of the importance of food gleaned from reefs or fished inshore in the subsistence economy.

The use of marine reserves as one means to address this issue has also come up frequently in discussions. Again, some progress can be seen with the formation of the Anono Marine Reserve, which appears to have gained general acceptance even though it is not yet formally backed by any legislation. However there may be more scope for reinforcing traditional conservation measures such as the imposition of fono or tapu rather than an overseas-style gazetted reserve.

Other issues raised, which will be addressed in later sections include land-based pollutants and invasive species. However, these appear to pose a minor or more localised threat to fisheries resources than over-harvesting.

4.2 WATER SUPPLY & QUALITY

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- Abandonment of water catchments system leading to dependence on freshwater lens
- Presence of faecal coliforms in some boreholes – from septic tanks & piggeries
- Possible contamination by weedicide (paraquat)
- Risk of saltwater contamination through over-pumping
- Uncertainty of safe extraction rates
- Local high levels of radioactivity

UNDESD (1992) – (A draft 5-year Water Development Plan)

- Inadequate pressure for end users
- Inadequate supply for agriculture, industry and tourism
- Existing bore holes too close to dwellings and hence contaminated by coliform bacteria
- Inefficient water reticulation system due to lack of trained personnel to plan, design, operate and maintain the system
- Excessive loss of water due to leakage and wastage

SOE 1993

- Possible over-pumping of groundwater resource leading to salt water intrusion
- Pollution of water resource – faecal coliforms, weedicides, fertiliser

NEMS 1994

- Waste and sewage disposal systems inadequate

CBEMP 1998

- Waste and sewage disposal systems inadequate

NBSAP 2001

- Vulnerability of freshwater lens to pollution from agricultural & industrial chemicals and domestic waste & sewage

CIVIL SOCIETY CONSULTATION

Recommendations made by civil society in response to current water issues that affect communities nation-wide.

1. **THAT** water quality tests be carried out

2. **THAT** due to lack of accurate scientific data regarding the safety of the water lens, a competent survey be conducted to identify the effects of “development”, and to address if necessary, ways of improving the quality of freshwater.

GOVERNMENT DEPARTMENT CONSULTATION

PROGRESS SINCE 1992

Legislation:

- Water Supply Act 1996

Planning:

- Water Resources Assessment 1992 - UNDP-funded project

Programmes:

- Water bores and meters projects - 1992/93 FFA-funded
- Rainwater Catchments project - 1995 - AIDAB-funded
- PACTAF Water Supply Project (Green, 2000) - AusAid-funded

Advocacy & Education:

- Ongoing community awareness programme under Water Supply Project (Green, 2000)

WORK STILL REQUIRED

CMEMP:

- Training in water quality management
- Water resource protection policy
- Water quality monitoring
- Modelling for sustainable catchments yields
- Integrating water quality management into resource development

NBSAP

Theme 4: Governance

Objective 1: Enact necessary legislation for the conservation and sustainable use of biodiversity

Action 1.5: Draft the required regulations to complement and ensure maximum protection of the water supply, as a matter of urgency.

Theme 5: Waste Management and Water Resources

Objective 3: Ensure Niue retains a safe and sustainable supply of freshwater

Action 3.1: The Water Supply Division of PWD and Health Department continue to work together to increase public awareness of ways of conserving and maintaining water quality.

Action 3.2: Set up a rigorous programme of water monitoring to test for chemical or bacteriological contamination or radioactivity, as required by the law and current WHO standards.

Action 3.3: Re-establish the village rainwater tanks as a back-up water supply and as a precautionary measure in case of pollution of the ground water lens.

Action 3.4: Undertake research to determine possible impacts on the underground water from sea level rise due to global warming and other causes.

Action 3.5: Raise people's awareness of the appropriate legislation governing water supply systems.

Action 3.6: Consider impacts on the underground water supply of any planned industrial developments, both the amount to be used and possible pollution effects.

UNFCCC National Communication

- Encourage use of village rain catchments systems and household back-up ... tanks
- Encourage use of 'grey water' for secondary household uses

DISCUSSION

Maintaining a sufficient, high quality water supply has been a key concern for Niue since 1992. However there has been significant progress made. The first bores were drilled in the 1950s/60s and in the past decade further improvements have included the construction of steel tanks for village water supplies (1992/96) and institutional strengthening through the AusAid-funded Water Supply Project since 1997 (Green, 2000). The last project has focussed on improving the efficiency of supply through improving piping and pumping systems, addressing leakages and increasing maintenance, resulting in water use half of what it was in 1997 (ibid). Draft Water Regulations were prepared in late 1997 including measures to register plumbers and ensure that only approved ones worked on the water supply system and to introduce small charges.

The issue of quality testing and chemical analysis of underground water is yet to be addressed satisfactorily. Underground water is prone to contamination from land based activities such as the use of (pesticides, fertilisers, herbicides), animal waste (primarily piggery waste), household waste, solid waste, rusted car bodies and other waste leaching through to the freshwater lens is a threat to the water resources.

A new project aimed at meeting the hydrological needs of Small Island Pacific States is being developed by World Meteorological Organisation (WMO) (WMO 2000). However it is not expected that this project will assist Niue's specific needs in Groundwater resources.

Chemical water quality analysis of freshwater resource is essential for IWP to consider. The Waste management Committee has endorsed what is called the Waste Management Plan 2000. This plan however, has not been implemented due to a lack of funding and resources.

Reducing the possibilities of contamination of the supply is part of many different initiatives. The Public Works Director referred to recommendations expected from a visit of US Engineers to alter the designs of septic tanks to reduce risks of contamination from this source (Appendix 3). DAFF are working to reduce pesticide use. The Waste Management Plan aims to improve the management of solid wastes. The planning guidelines from the LMRUP Project address a wide range of associated issues.

There has been some discussion about the need to improve water storage facilities in case the supply is disrupted by natural disasters such as cyclones. The AusAid Water Supply Project does include provisions for maintenance of village supply tanks. Re-use of house roofs, as catchments may also prove worthwhile.

4.3 WASTE MANAGEMENT

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- Waste & sewage disposal
- Oil spills, especially around the harbour

SOE 1993

- Management of domestic waste - recycling - location of dumps – managing dumps – large waste (e.g. cars)
- Recycling
- Disposal of hospital waste
- Chemical and hazardous waste – agricultural chemicals, batteries, waste oil
- Oil spills
- Sanitation
- Need to deal comprehensively with land, groundwater, air and noise pollution
- Control importation and production of hazardous substances

NEMS 1994

- Waste and sewage disposal systems inadequate
- Inadequate dispersal of solid waste and lack of suitable landfill sites for garbage disposal

CBEMP 1998

- Some importing laws and policies hinder proper waste management
- Need to improve waste storage and management with emphasis on household sanitation

CIVIL SOCIETY CONSULTATION

- Septic wastes not treated

THAT all dwelling houses and work places with asbestos roofing be replaced (largely a health issue but with waste management implications).

GOVERNMENT DEPARTMENT CONSULTATION

- Coastal-sited rubbish dump may leach into sea

PROGRESS SINCE 1992

International Agreements:

- Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matters 1972

Legislation:

- Marine Pollution Act 1975. Marine Pollution Act 1974 (NZ)

Planning:

- Waste Management Plan

Advocacy & Education:

- Many primary school programmes (can recycling, use of tyres, recycling other rubbish)

WORK STILL REQUIRED

NBSAP

Theme 5: Waste Management and Water Resources

Objective 1: Improve the management of waste in Niue

Action 1.1: Adopt and implement the draft Waste Management Plan

Action 1.2: Ensure that the Government works very closely with the Chamber of Commerce and in consultation with the South Pacific Regional Environment Programme (SPREP) to introduce appropriate new technology and systems for managing waste on Niue.

Action 1.3: Investigate the feasibility of a treatment plant to treat human waste.

Action 1.4: Make more use of a centralised rubbish dumping site and continue improvements in its management

Action 1.5: Establish a system to ensure proper disposal of rubbish in village sites.

Action 1.6: Obtain an appropriate incinerator for the disposal of hospital and other toxic wastes

Action 1.7: Continue a programme to replace asbestos in roofs, declaring houses with asbestos roofing as a health hazard, consider the safe removal and disposal of all asbestos roofed houses that are unoccupied, and ban any further imports or use of asbestos. Dispose of the asbestos in a way that minimises impacts on environment and human health.

Action 1.8: Research means to reduce use of pesticides, change to less toxic products or replace them with integrated agricultural management techniques.

Action 1.9: Continue and support public awareness to prevent littering.

Objective 2: Develop recycling programmes wherever possible

Action 2.1: Continue to support the existing recycling programme for aluminium cans.

Action 2.2: Support the recycling programme for batteries to send overseas.

Action 2.3: Investigate re-cycling options for all other non-biodegradable materials, e.g. plastics and used vehicles and tyres.

Action 2.4: Government and retailers to agree and implement a systematic and suitable method of separating the different types of waste, for example – food, waste meat, plastic wrappings, tin cans and empty bottles.

Action 2.5: Encourage separation and composting of organic waste.

Action 2.6: Investigate new technologies that reduce waste and contribute to ecologically sustainable development.

CBEMP

- Conduct feasibility study on recycling/mulching/composting of organic waste
- Review current laws/policies that hinder ‘minimal waste’ targets
- Investigate feasibility of more recycling schemes and refuse transfer stations in villages
- Investigate use of waste products to reclaim mining sites, maketea pits

UNFCCC National Communication

- Implement a ‘waste recycling’ mind-frame rather than ‘waste management’ mind frame
- Promote public awareness of recycling, composting and other alternatives to reduce amount of solid waste

DISCUSSION

Waste management has received much attention in the past ten years culminating in the production of the Waste Management Plan and the implementation of some of its provisions during a 1-year placement by an overseas expert in the Health Department (e.g. a collection of batteries programme). The nation’s aluminium can recycling programme run by the Catholic Church is held up as an example to the whole region of a successful initiative.

There is still work to do, particular to change the emphasis from disposing of waste to recycling and to minimising it in the first place through controlling the import of certain goods. The management of sewage and organic wastes are two areas where recycling is being advocated.

4.4 TERRESTRIAL – HABITATS & SPECIES

4.4.1 TERRESTRIAL HABITATS

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- Lack of legislation for the utilisation and conservation of natural resources
- Deforestation

SOE 1993

- Substantial forest clearance
- Need to establish protected areas
- Lack of current information on location of plant and animal habitats
- Over-exploitation of forests
- Need to protect and conserve environmental resources to support subsistence economy

NEMS 1994

- Insufficient information on the natural resources of the island
- High rate of decline in areas of merchantable forest
- No legislation allowing for establishment of protected areas
- Few incentives for local people to establish protected areas
- Lack of information to identify areas of ecological and cultural significance
- Lack of local role model for conservation area system
- Lack of up-to-date information for local communities to make resource management decisions, e.g. re: logging.
- Lack of knowledge about the use and value of forests

CBEMP 1998

- Lack of reconnaissance level and detailed investigation of the ecological characteristics of the vegetation cover of Niue (with the exception of the Huvalu CA)
- Incomplete land cover base mapping and community/habitat mapping

NBSAP 2001

- High rate of deforestation
- Reduced forest patch size
- Non-sustainable land management
- Lack of comprehensive mapping and land information

CIVIL SOCIETY CONSULTATION

- Land disputes
- Overuse of land

THAT new protected areas be established for land-based natural resources

GOVERNMENT DEPARTMENT CONSULTATION

- Excessive forest clearance
- Need for baseline data
- Increased development of access roads into forested areas for plantations
- Local Area Plans to be finalised to allow communities to better manage their resources
- Network the GIS system
- More awareness programmes for communities on principles of sustainability

PROGRESS SINCE 1992

Planning:

- Forest Policy

Protected Areas:

- Huvalu Forest Conservation Area
- Hakupu Heritage & Cultural Park

Information:

- Forest surveys of Huvalu CA

Advocacy & Education:

- Development of an environment web page as a promotional and educational tool incorporating the Huvalu Project

WORK STILL REQUIRED

NBSAP

Theme 1: Conservation and Sustainable Management of Terrestrial Habitats

Objective 1: Forest Conservation and Management

Action 1.2: Investigate the provision for providing legislation to retain primary (merchantable) forest, using only secondary forest and fern lands for cropping

Action 1.4: Support in principle the implementation of the management plan for the Huvalu Conservation Area Project.

Action 1.5: Encourage the establishment of further community-based conservation areas in consultation with landowners and village councils, for other potential sites using the approach of the Huvalu Conservation Project, Local Area Plans or other appropriate methodologies.

Action 1.6: Support and facilitate the implementation of the activities of the Hakupu Heritage and Cultural Park

Action 1.8: Investigate ways to ensure that designated protected areas for biodiversity, heritage or traditional restrictions are excluded from timber harvest, hunting and farming practices.

UNFCCC National Communication

- Preservation and conservation of forest areas, other than the Huvalu Conservation Area
- Initiation of an indigenous tree planting programme
- Government legislation for a National Forest Policy for Niue, based on 1998 National Forest Policy Statement

DISCUSSION

The management of terrestrial habitats is closely linked to the issues of agriculture and forestry, which are covered in later sections. A clear priority is to support the Huvalu Conservation Area project, which would protect c 20% of the country's land area. An income-generating scheme using coconut oil (Parr, 1998) is working well, but there is also a need to demonstrate benefits from protecting the resources of the native forests themselves, such as the peka and lupe, perhaps through eco-tourism. There then needs to be programmes to encourage other communities to protect areas of primary forest using traditional methods and Local Area Plans should be finalised as a means to balance this with land in agricultural production.

More ecological surveys are needed beyond the Hakupu Conservation Area to identify sites or habitats requiring some measure of protection, whether because they are representative or special in supporting certain rarer species.

4.4.2 TERRESTRIAL SPECIES

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- Number and types of birds present are declining
- Export of coconut crab (legislation in preparation)
- Uncertainty of impacts of feral cats, dogs and pigs on wildlife
- Uncertainty of impacts on wildlife of use of pesticides
- Need for thorough cataloguing and monitoring of flora and fauna
- Noxious weeds such as Honolulu rose, lantana and mimosa spreading to agricultural land
- Possible introduction of goats may present an environmental hazard

SOE 1993

- Concern about lupe population levels
- Considerable concern about peka population levels
- Concern about uga population levels
- Impacts of feral livestock particularly pigs and goats

NEMS 1994

- Lack of systematic botanical surveys and in particular ecological surveys and those of wildlife and other natural resources
- Lack of knowledge of distribution of most fauna species

NBSAP 2001

- Over-harvesting of uga, peka and lupe
- Alien invasive species, particularly plants
- Lack of detailed knowledge of some groups
- Impacts of rats on birds
- Decline of hega (blue-crowned lory) and moho (spotless crane)

CIVIL SOCIETY CONSULTATION

- Illegal hunting of lupe and peka out of season
- Over-harvesting of uga
- More feral animals - cats, dogs, pigs – uncontrolled
- Establish a 3-year task force to eliminate wild feral animals
- Reduce to one shooting season
- Stop shooting for a five-year period
- More strongly enforce shooting regulations
- Raise price of ammunition
- Develop a monitoring system to record harvesting rate of uga and report results back to people
- Implement conservation practices for uga equivalent to the ‘no shooting’ seasons for birds
- Need more animal and bird sanctuaries
- Reduce to one shooting season
- Stop shooting for a five-year period
- More strongly enforce shooting regulations
- Raise price of ammunition
- Develop a monitoring system to record harvesting rate of uga and report results back to people
- Implement conservation practices for uga equivalent to the ‘no shooting’ seasons for birds
- Need more animal and bird sanctuaries

GOVERNMENT DEPARTMENT CONSULTATION

- No guidelines for the use of natural resources such as peka and lupe

PROGRESS SINCE 1992

International Agreements:

- Convention on Biological Diversity (CBD) 1992

Legislation:

- Animal Trespass Act 1997 – addresses increasing feral pig problem
- Domestic Fishing Regulations 1996 – includes provisions for conservation of uga (export controls, size restrictions, etc.)

Planning:

- Invasive Species in the Pacific - SPREP Regional Strategy (Sherley, 2001)
- NBSAP
- Review of Quarantine Services (Plummer, ????)

Information:

- Surveys of peka (Brooke, 1998)
- Population survey of uga (Bereteh, 1999)
- Bird surveys (Powlesland et al., 2000)
- Surveys of extinct birds (Worthy et al., 1998)
- Survey of invasive plant species of environmental concern (Space & Flynn, 2000)

Advocacy & Education:

- Book on trees of Niue in production
- Guide to the Birds of Niue Book

WORK STILL REQUIRED

Species Conservation

NBSAP

Theme 2: Conservation of Terrestrial Species

Objective 1: General Measures:

Action 1.1: Undertake further systematic botanical, wildlife and natural resource surveys

Action 1.2: Produce a bibliography of the biological diversity of Niue.

Objective 2: Conservation of Birds

Action 2.1: Ensure the conservation of the lupe in sufficient numbers to sustain a harvest for traditional purposes through the following:

- Review the hunting season and ensure that any lasts no more than two months.
Undertake research to determine the breeding season and adjust the timing of the hunting season to avoid this

- Gather information on population size and trend and breeding rate to determine a sustainable harvest level
- Maintain and expand the lupe monitoring programme

Action 2.2 Strictly enforce the firearms management system and the hunting season.

Action 2.3: Develop and implement a plan for the conservation of the endangered hega (blue-crowned lory) (including consideration of localized rat control, nest protection through tree banding and captive breeding)

Action 2.4: Enact and enforce legislation to give partial protection to the lupe (allowing for regulated hunting) and full protection to all other bird species.

Action 2.5: Undertake surveys and monitoring to establish the status of all Niue's bird species.

Objective 3: Conservation of the Peka

Action 3.1: develop a Management Plan for the Conservation of the Peka, to include the following:

- Consideration of restrictions on hunting to allow population to recover to the c8000 level
- Placing of temporary hunting bans after any cyclones until number increase to the same level
- Monitoring of the numbers of peka shot each season (either by random survey of hunters at the end of the season, or by requiring a report of the number shot in the 1st month before purchasing ammunition for the 2nd month) to determine if population increased enough for hunting to resume.
- Legislating for the determination of the hunting season (if any) annually based on the results of the monitoring.
- Closing Huvalu Forest to peka hunting and protect from cutting the primary forest including that alongside the Alofi-Lakepa road (key roosting and foraging areas).
- Eliminating shooting of peka at roosts, allowing these to become tourist attractions.
- Enforcing the ban on peka hunting outside the shooting season and carry out research to confirm that the shooting season and breeding season do not overlap.

Objective 4: Conservation of the Uga (coconut crab) and other land crabs

Action 4.1 Ensure the conservation of the uga through the following:

- Enforce the current legislation on minimum sizes, etc.
- Actively discourage the harvesting of breeding females.
- Investigate means to reduce the export of uga
- Close all areas to hunting during the breeding season (December-January)
- Ensure dogs are not used for hunting
- Protect crab sanctuaries using Hakupu Heritage Park as an example
- Undertake monitoring to ensure numbers do not decline further.
- Develop a public awareness programme to promote the conservation of the uga and explain the regulations
- Encourage further research into the biology of the uga

Invasive Species management

NBSAP

Theme 6: Alien and Invasive Species

Objective 1: Prevent the introduction of new invasive species

Action 1.1: Strengthen the border control and quarantine system to detect and destroy alien invasive species entering the country.

Action 1.2: Monitor ships in port to ensure they do not discharge ballast water (a potential source of serious marine pests) or other wastes.

Action 1.3: Establish procedures to assess the environmental risks before introducing any new species for agricultural, aquaculture or garden use (Pest Risk Analysis).

Action 1.4: Establish procedures to detect the arrival of any alien invasive species through the port or airport and to organise their immediate eradication.

Action 1.5: Strengthen the Agriculture Quarantine Regulations to ensure that they include adequate fines for anyone involved in the introduction of an invasive species.

Action 1.6: Ensure that an Environment Impact Assessment (EIA) study is conducted before all live animal imports to the Quarantine Farm (such as the introduction of alpacas from Peru to New Zealand through quarantine in Niue).

Objective 2: Reduce and eliminate the impacts of existing pest species

Action 2.1: Control the numbers of feral pigs and encourage their eradication through the bounty system.

Action 2.2: Provide information on and enforce regulations to ensure that all pigs are confined to pens and prosecute those who allow them to wander.

Action 2.3: Control the numbers of feral dogs through enforcement of the Niue Dog Ordinance and Niue Impounding Ordinances.

Action 2.4: Investigate the feasibility of control or eradication of rats on Niue.

Action 2.5: Educate the public in ways to eliminate feral cats and encourage owners to prevent cats going feral.

Action 2.6: Provide guidelines for the management and eradication of invasive weed species.

Action 2.7: Establish legislation requiring people to control or eradicate certain identified invasive weeds or their land.

Action 2.8: Maintain the program to monitor and carry out surveillance for fruit flies.

Action 2.9: Develop a facility for the disposal of unwanted domestic animals.

Objective 3: Raise Awareness of the risks posed by invasive species

Action 3.1: Produce publicity material for shipping companies and arriving air passengers, identifying the range of potential invasive species in the region and the risks they could pose to Niue's environment and its agricultural, fisheries and tourism sectors.

Objective 4: Build the capacity required to manage the threats posed by invasive species

Action 4.1: Link closely into the current regional programme to receive updated information of potential new pests in the region - particularly in countries with which Niue has air and sea links - and new eradication and control measures.

Action 4.2: Develop an early response plan for the eradication of newly introduced alien invasive species.

Action 4.3: Provide necessary equipment and facilities to deal with any intrusion and introduction of alien species.

DISCUSSION

Regarding the conservation of native species, concerns are frequently voiced about the likely over-harvesting of peka, lupe and uga. For the first two, measures such as enforcing the regulations more strongly, reducing the amount of ammunition available or instigating a 3-year shooting ban seems sensible. However, they are unlikely to work unless people see the need for them, so the priority must be to provide communities with good information showing current population trends, potential productivity and so forth. Similarly for the uga, all the information about the biology of the species needs to be available in Niuean. While conservation of these three species is a priority because of the roles they play in Niuean customs, the apparent threat of extinction of the blue-crowned lory needs addressing with management and research.

Management of current animal pests needs re-enforcement, particularly addressing feral pigs and cats. Control of rats should also be investigated. Good information is now available on all weeds of concern and further programmes like the wedelia one are needed.

Preventing the establishment of further invasive species largely means strengthening border control. A review has taken place through NZODA (Plummer ????) and training initiatives are in place and discussions being held with SPC regarding funding. Niue is also one of three countries undertaking pilot projects through a SPREP regional project [\[obtain details\]](#)

4.5 AGRICULTURE

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- Changing patterns in agriculture
 - Use of heavy machinery
 - Over-use of herbicides
 - Abandonment of traditional practices
 - Loss of soils

SOE 1993

- Over-exploitation of soils
- Environmentally unfriendly agricultural methods – overuse of chemicals
- Over-development of bush roads
- Lack of land use planning
- Chemical and hazardous waste – agricultural chemicals

NEMS 1994

- Widespread use of pesticides with little assessment of environmental impacts
- Poor management of agricultural production, harvesting, inspection, packaging, storage, transportation and marketing (inhibiting export market development)
- Fallow periods shortening

CBEMP 1998

- Soils – increasing pressure on less depleted areas
- Need for review of opportunities and constraints for livestock production

NBSAP 2001

- Decline in soil fertility and structure
- Loss of agricultural biodiversity

CIVIL SOCIETY CONSULTATION

- Use of pesticides that kill native plants
- Bulldozing for plantation clearance

GOVERNMENT DEPARTMENT CONSULTATION

- Agricultural policy largely with income generating rather than sustainable focus (e.g. Moui Faka Niue Scheme & programmes to develop new crops such as limes and passion fruit, which required intensive cultivation.

- High levels of deforestation associated with unsustainable land clearance
- The use of pesticides (eg with lime/passion fruit programmes)
- Unsustainable resource use in general.

PROGRESS SINCE 1992

International Agreements:

- Party to UNCCD and first national draft report is in completion for submission.

Planning:

- Forest Policy (DAFF 1998)
- Agricultural Policy 2000-04

Programmes:

- Plant Protection Programme (NZODA-SPC) (Salter, 2000)

Information:

- Survey of invasive plants of conservation concern (Space & Flynn, 2000)
- Niue Pest Survey (McKenzie et al., 2000)
- Review of constraints to vegetable production (Roberts, 1999)

WORK STILL REQUIRED

NBSAP

Theme 1: Conservation and Sustainable Management of Terrestrial Species

Objective 2: Sustainable management of cleared lands for agricultural and other purposes

Action 2.1: Develop a Code of Practice for land clearance using best practice including the following, and provide necessary training:

- Restricting D9 bulldozers to public infrastructure work or land clearance in previous fallow areas. (This would serve to protect areas of primary forest, which D6's are not capable of clearing).
- Ensure that operators keep their bulldozers away from reserve land, burials, historical sites, and traditional forts.
- Ensure that bulldozer operators are made aware of which trees are useful food sources for wildlife and which are used as boundary markers between landowners.
- Ensure that bulldozer operators leave a litter layer and do not disturb the soil
- Discourage or ban the use of fire to clear land

Action 2.2: Continue and encourage research into alternatives to chemical fertilizers – e.g. bio-fertilisers, green manure with legumes, increased composting.

Action 2.3: Promote organic farming and develop markets for organic products.

Action 2.4: Undertake research to identify new crops suitable for Niue that will make sustainable use of cleared land.

Action 2.5: Develop monitoring programmes for key environmental indicators, e.g. forest cover. Maintain and develop Niue's GIS and land mapping capability.

Action 2.6: Identify, develop and implement the conservation of the genetic resources of Niue, particularly agricultural crops.

CBEMP

- Co-ordinated work on depleted soils (aim of rejuvenating areas to reduce pressure for clearance of primary forest)
- Training in soil assessment
- Research and feasibility analyses of other indigenous species and alternative high value crops
- Education and training on quarantine and intensive livestock management

CIVIL SOCIETY CONSULTATION

- Research on marketable alternative crops

DISCUSSION

The history of agricultural developments in Niue shows that there was little regard paid to environmental sustainability. For example in the 1960's, disc-ploughing programmes caused long-lasting damage to some soils. Then, in the early 1990's, before UNCED, there was the development of the Moui Faka Niue scheme, which has continued. This was focussed on producing crops for export (primarily taro, coconuts yams & cassava but also vegetables) in an effort to return the country to being economically self-supporting and it received funding from AIDAB, NZ, UNDP and FFA in 1991 (Panama et al., 1991). Long term (1994-2000) production targets were significant: taro –200 bags, cassava – 100 bags, yams – 50 boxes, dry coconuts – 30 bags, green coconuts – 30 bags. No environmental protection provisions were evident and the programme is considered by some to have significant environmental impacts through incentives for land clearance.

However, since UNCED there is evidence of increased environmental awareness and planning now is concentrating on sustainability and making maximum use of cleared lands. Control over the use of pesticides is one area where clear progress has been made including the Pesticides Act 1991 and the establishment of a Pesticides Committee to oversee their management. [It would be good to be able to assess changes since the 1989 Agricultural Census, e.g. use of pesticides, and I think that Volume 2 of Forest Policy may have data on a more recent survey under that project].

There is a continuing shift in the crops grown, away from those such as limes and passion fruits, which required major chemical inputs, to vanilla, vegetables and organic farming methods. A review of vegetable growing (Roberts 1999) identified the challenge of combining careful management of soil organic matter and modern fertiliser practices. The replacement of some shifting agriculture with permanent market gardens with established water supplies should benefit the environment by reducing clearance of forests or allowing more to regenerate. The same study provided advice on the regenerating of soils of areas where years of extractive agriculture have left them supporting only ferns and

low scrub. Again, this could shift agricultural pressures away from areas of more biodiversity value if these damaged sites could be used again.

Research is proposed to improve the efficiency of taro production and to investigate mulching and composting as weed control and soil enhancement options. There is also now a good information base on disease and insect pests.

There is a need for careful attention to be paid to the use of agricultural incentives. Past ones such as borrowing provisions for land clearance and assistance with the construction of plantation roads, can lead to unsustainable practices that ultimately damage the environment.

4.6 FORESTRY

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- Need for extension of traditional tapu conservation concept for forests to be extended into legislation

SOE 1993

- Substantial forest clearance
- Over-exploitation of forests

NEMS 1994

- Ad hoc planning in forestry sector
- Lack of knowledge about use and value of forests
- Insufficient replanting to replace forest being lost

NBSAP 2001

- High rates of forest clearance
- Reduction of sizes in forest patches decreasing their resilience

CIVIL SOCIETY CONSULTATION

- Plantation forestry not economical

GOVERNMENT DEPARTMENT CONSULTATION

- Too much forest clearance
- Lack of management guidelines for the management of natural resources

PROGRESS SINCE 1992

International Agreements:

- Party to UNCCD and first national draft report is in completion for submission.

Planning:

- Forest Policy (DAFF, 1998)
- Review of Forestry Project (NZODA, 1998)

Programmes:

- Agro-forestry programme – collaboration between NZODA and GTZ (2001-04) (Nakalevu, 2001).
- Project Mahogany (this project was reviewed in 1999 and based on the recommendations of the review has halted further planting of exotic tree species such as Mahogany with a focus to re-introduce native species.)

Advocacy & Education:

- Sustainable Indigenous Forest Management

WORK STILL REQUIRED***CBEMP***

- Research and training in use of indigenous tree species

NBSAP***Theme 1: Conservation and Sustainable Management of Terrestrial Habitats******Objective 1: Forest Conservation and Management***

Action 1.1: Implement the Niue National Forest Policy

Action 1.3: Integrate results of Forest Policy consultation and its recommendations into the Integrated Environment Planning & Management Bill and the Environment Bill.

Action 1.7: Research the development of a sustainable logging industry. Approve the Code of Logging for the logging industry (limiting the cut per year and technology to be used).

Action 1.9: Investigate the use of native trees for any future timber plantations as they provide food for wildlife, which most introduced species do not.

Action 1.10: Encourage and promote agro-forestry systems.

Action 1.11: Promote forest-based eco-tourism and ensure coordination of efforts with conservation initiatives to avoid land-use conflicts or duplication of effort.

Action 1.12: Facilitate the development of income-generating activities making sustainable use of non-timber forest products (e.g. handicrafts, medicinal and health products) and wildlife.

DISCUSSION

The forestry sector has shifted during the period, from an emphasis on planting exotic trees in plantations for an export timber industry to one of promoting the sustainable use of Niue's indigenous forest and assisting communities to manage these as a renewable resource. Recent initiatives include a planned agro-forestry programme with the goal of bringing back large tracts of abandoned lands in N. and S. ends of island into active production so that rapid reduction of forests to large commercial taro production is reduced (Nakalevu, 2001). There is an opportunity to develop a sustainable local timber industry. The emphasis for native forests has shifted to their conservation so that communities can make sustainable use of their resources, such as the lupe and peka.

The single main activity required in the sector is the implementation of the Forest Policy and possibly giving this some legislative mandate. Increasing community awareness of the issues will be needed so that they can make their own informed decisions about the management of their forests.

4.7 CLIMATE CHANGE

CONCERNS IDENTIFIED

LITERATURE REVIEW

SOE 1993

- Increased frequency and severity of tropical storms
- Changes in performance of freshwater lens
- Increased coastal erosion and storm damage to infrastructure

NBSAP 2001

- Possible effects on freshwater lens of any sea level rise

UNFCCC National Communication (Government of Niue [2000])

- Predicted sea level rise threatens fresh water lens
- Climate change within natural ecosystems (e.g. reefs, rainforests) could change species composition
- Increased incidence and severity of tropical cyclones and associated damage to infrastructure and the environment
- Possible changes in infectious disease status

CIVIL SOCIETY CONSULTATION

Improve and update weather forecast information system

GOVERNMENT DEPARTMENT CONSULTATION

PROGRESS SINCE 1992

International Agreements:

- United Nations Framework Convention on Climate Change (UNFCCC). 1992. International convention to protect the climate from the increasing atmospheric concentrations of greenhouse gases that is resulting in the additional warming of the Earth's surface and atmosphere.

Planning:

- UNFCCC National Communication
- Government Energy Policy

Information:

- National Inventory of Greenhouse Gases

Advocacy & Education:

- Campaign using print, radio and TV media within UNFCCC project including 'Climate Awareness Day'

WORK STILL REQUIRED

The UNFCCC National Communication contains a long list of suggested adaptation measures for the coastal zone, agriculture, forestry and land use, biodiversity, health and socio-economic resources. Work required addressing the key driver of climate change by reducing emissions of greenhouse gases are as follows:

Adaptation Measures to Mitigate and Adapt to Impacts of Climate Change on Niue.

Energy & Industry

- Increased efficiency and maintenance of diesel generators
- Encourage use of solar heating and other renewable energy options
- Encourage use of low energy rate appliances
- Encourage use of energy saving light bulbs

Transport

- Encourage car pooling to and from work
- Enforce maximum speed limits
- Implement and improve standards of warrant of fitness for vehicles
- Promotion of bicycle use and walking
- Importation of more fuel-efficient vehicles

Forestry

- Preservation and conservation of forest areas, other than the Huvalu Conservation Area
- Initiation of an indigenous tree planting programme
- Government legislation for a National Forest Policy for Niue, based on 1998 National Forest Policy Statement

Waste Management

- Implement a 'waste recycling' mind-frame rather than 'waste management' mind frame
- Promote public awareness of recycling, composting and other alternatives to reduce amount of solid waste

Water Resources

- Encourage use of village rain catchments systems and household back-up tanks
- Encourage use of 'grey water' for secondary household uses

Infrastructure

- Protection measures for the Bulk Fuel Storage Tanks from storm surge
- Protection measures for the Hospital and Huanaki Cultural Centre from storm surge

- Protection measures for the Hotel Niue and the Public Works Department
- Protection measures for residents residing along the western coastline who are most vulnerable to the effects of storm wave damage
- Protection measures for canoe and boat landings on the western coastline and the only port landing in Alofi

Agriculture

- Better protection methods for crops vulnerable to strong wind damage
- Cultivation of better drought resistant crops or find new ways that existing crops can adapt to extreme events
- Use of appropriate technology to promote new initiatives like organic farming and hydroponics systems

Work required to allow Niue to prepare appropriately for climate change include addressing several capacity building needs, further education and awareness-raising work, and attention to policy development.

DISCUSSION

Niue is a minor producer of greenhouse gas emissions per capita. However, the actions required, as listed above, all contribute significantly to sustainable development. They should be included within programmes addressing the different areas, e.g. Forestry.

SECTION 5: SOCIAL CONCERNS

5.1 INSTITUTIONAL FRAMEWORKS AND CAPACITY BUILDING

CONCERNS IDENTIFIED

LITERATURE REVIEW

SOE 1993

- Need to resource new Environment Administration

NEMS 1994

- Environment Unit has limited mandate, single position and no clear budget of its own – reactive not proactive – little ability to coordinate environment management concerns with economic development decision-making process

CBEMP 1998

- The CBEMP project was focused on capacity building. It did not specifically identify concerns with the way that the environment was being managed at that time, however its list of areas and activities required which are presented in the ‘Work Still Required’ section suggest what some of these were.

NBSAP 2001

- Fragmented approach to environmental management

CIVIL SOCIETY CONSULTATION

- Lack of coordinated decision-making
- Lack of integration by Government with other stakeholders and NGO’s
- More initiatives for capacity building in all Government Departments

GOVERNMENT DEPARTMENT CONSULTATION

- Environment Unit reactive not proactive
- Lack of continuity of effort
- Lack of a co-ordinating body, e.g. Sustainable Development Commission
- Insufficient monitoring of national performance
- Disjointed administration of the country’s environmental mandate
- Lack of coordination of the management of sustainable development
- Consider uniting environmental activities within a Land & Resources Department
- Develop a co-ordinating body

- Amalgamate Environment Unit, Environment Planning Unit, waste management and water monitoring under one umbrella

PROGRESS SINCE 1992

Government Structure:

- Environment Unit within Department of Community Affairs
Planning:

WORK STILL REQUIRED

NBSAP

Theme 4: Governance

Objective 3: Develop appropriate institutional mechanisms and capacity for the implementation of this strategy

Action 3.1: Maintain the NBSAP Steering Committee, reviewing its membership, to plan and organize a programme for the implementation of the NBSAP.

Action 3.2: Build capacity in the Environment Unit, DCA, as the key-implementing agency for the NBSAP to ensure the full realization of that strategy.

CBEMP

- Strengthening in-country coordination to ensure the involvement of the right players, to minimise duplication and confusion, to enable integration of different programmes, to monitor gaps and shortfalls and ensure the involvement of local people
- Co-ordinating administrative procedures for project development locally
- Improving internal and external communication links
- Improve the human resources of the Environment Unit (extra manpower and training)
- Review Environment Unit structure and possible departmentalisation as a long term strategy
- Increase training of staff (of several departments) in resource management
- Coordinate resource use planning and management - need for a central unit to coordinate sustainable development decision making

DISCUSSION

This is considered a key issue. However, there have been many regional and international programmes established since UNCED, these have not been matched by a consistent, appropriate Government framework for managing the environment and sustainable development. Some strengthening of individual agencies has occurred during the delivery of these programmes as co-ordinating officers are appointed for limited contracts, but the ongoing capacity has increased little.

Three concerns are clear. The first is the disjointed management of the environment with an Environment Unit housed in Department of Community Affairs, an Environment Planning Unit located in Department of Justice, Lands & Survey, and other responsibilities located in DAFF and Health Department. The amalgamation of the two

Units has been identified as a priority for some time but there is discussion about which Department is appropriate. A stand-alone Department could be considered, particularly if the WSSD leads to new initiatives, e.g. one to resource implementation of the NBSAP.

The second concern is the lack of a co-ordinating body within Government, particularly to address the issues identified in the CMEBP above. There have been a number of committees set up at different times such as the NEMS Task Force and the NBSAP Steering Committee, and Task Forces are proposed under both the IWP and WSSD projects. Environment Council is proposed under the draft Environment Bill. It is suggested that a single entity is established that can fulfil all such future roles, made up of representatives of key Government Departments with links to the environment and sustainable development, together with the private sector. It could establish sub-committees to oversee the different programmes.

The final concern is a simple one of capacity. The Environment Unit has two staff and is almost fully employed meeting obligations to international and regional programmes giving it no opportunity to sustain any proactive initiatives. There is only a single Environment Planning Officer, so no backup and thus no GIS capacity when she is away. Other units such as Fisheries, Quarantine [check and add to the list] is largely dependent on a single, experienced officer. The means need to be found to create permanent positions if the challenges sustainable developments are to be met.

[Check the discussion boxed with other agencies....](#)

5.2 PLANNING AND ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED 1991

- Evidence of continuing population decline required a different approach to development planning

SOE 1993

- Lack of monitoring and reporting on environment

NEMS 1994

- Principles of physical planning not yet applied to the bulk of land and sea resources in Niue
- Need to use newer models of economic planning that take into account the depletion of natural resources and the decline in the support services of the environment
- Development proposals need to be subject equally to environmental as economic appraisal
- Need for EIA for all projects that could have an environmental impact

CBEMP 1998

- The CBEMP lists a number of activities needed to address concerns in this area which are listed in 'Work Still Required' below

CIVIL SOCIETY CONSULTATION

- **THAT** the Government be realistic in its policies to counter de-population and to concentrate resources to improve standard of living of the Niueans residing in Niue
[RECHECK! THIS DOESN'T SOUND RIGHT HERE – NO OTHER CONCERNS RE. EIA FROM C.S.](#)

GOVERNMENT DEPARTMENT CONSULTATION

PROGRESS SINCE 1992

Legislation:

- Draft Environment Planning Act

Planning:

- LMERP Project and associated Guidelines – [CHECK LMERP OR LMURP???](#)

WORK STILL REQUIRED

NBSAP

Theme 4: Governance

Objective 2: Develop appropriate policy statements for biological diversity conservation

Action 2.1: Ensure that any development projects undergo an Environment Impact Assessment. (EIA)

CBEMP

- Adopt an integrated approach to environmental policy and planning
- Incorporate the principle of sustainable development into the mandates and policies of the sectoral line departments
- Promote common approaches to economic and environmental planning in both public and private sectors
- Promote open consultation mechanisms with local communities and the pursuit of traditional consensus approaches to decision making
- Develop and apply EIA guidelines
- Institutionalise EIA as part of the physical development, resource use policy programmes, and environmental decision making process
- Coordinate resource use planning and management - need for a central unit to coordinate sustainable development decision making

DISCUSSION

Addressing the concerns within this issue is vital for sustainable development. The work required has been clearly identified during the LMRPP and much of it has been done with the production of guidelines and drafting of legislation. It is now largely a matter of finalising these and of running a public awareness campaign so that all can see the benefits of initiatives like EIA and local planning and will adopt them.

5.3 LEGISLATION

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- Lack of legislation for the utilisation and conservation of natural resources

SOE 1993

- Need to incorporate EIA provisions in legislation

NEMS 1994

- Lack of comprehensive framework of environmental law

NBSAP 2001

- Lack of legislation covering management of the environment as a whole

CIVIL SOCIETY CONSULTATION

- **THAT** the Environment Bill be enacted

GOVERNMENT DEPARTMENT CONSULTATION

PROGRESS SINCE 1992

[ANYTHING GOING IN HERE LOU?](#)

WORK STILL REQUIRED

NBSAP

Theme 4: Governance

Objective 1: Enact necessary legislation for the conservation and sustainable use of biodiversity

Action 1.1: Ensure that immediate action is taken to enact into law the draft Environment Bill.

Action 1.2: Ensure that immediate action is taken to finalise and pass into law the Integrated Environment Planning and Management Bill

Action 1.3: Draft and enact Bio-prospecting regulations to protect traditional knowledge applicable to the use of the biological resources of Niue.

Action 1.4: Adopt the draft Access to Benefit Sharing (ABS) guidelines in consistence with the regionally accepted “Access Laws Check list” and “Guidelines and Access to Genetic Resources in the Pacific Island Countries”.

Action 1.5: Draft the required regulations to complement and ensure maximum protection of the water supply, as a matter of urgency.

Action 1.6: Ensure that Niue becomes a party to the Cartagena Protocol (bio-safety protocol).

Action 1.7: Continue the current arrangement with respect to the Convention on International Trade in Endangered Species (CITES) enabling New Zealand to act at the request of the Niue Government.

Action 1.8: Ensure that the Agriculture Quarantine Act 1984 is reflected in any new entry and departure forms.

DISCUSSION

This is another area like the one of Government structures in which little concrete progress has been made to the frustration of many. A good deal of effort has been put into consultations and drafting legislation but the two key statutes, an Environment Bill and Environment Planning Act have not been passed into law. This stands out as a priority. Further delays and prevarication will undermine the country's ability to meet the challenges of environmental management and sustainable development. Not all the measures will be immediately popular and associated public awareness campaigns will be needed.

[FORWARD TO BENDY AT AG'S OFFICE FOR CONSOLIDATION](#)

5.4 EDUCATION AND PUBLIC AWARENESS

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- Limited provision for environmental education in both schools
- Teachers to receive more in-service training on environmental matters
- Community Education Unit to have a role in advancing environmental education

BENSON 1992

[a specific review of environmental education and community awareness]

- Environmental education is being covered in an unsystematic, haphazard manner
- Most teachers and students have a narrow limiting view of what 'environmental education' is about
- There is a lack of resources for environmental education

SOE 1993

- Lack of environmental awareness and education

NEMS 1994

- Lack of public awareness on the need for and ways of protecting the environment
- Difficulties integrating environmental education into schools due to non-availability of appropriate Niuean material – lack of trained teachers – non-inclusion of environmental science in examinations

NBSAP 2001

- Lack of understanding within communities on how to sustainably manage their resources
- Lack of information material for communities

CIVIL SOCIETY CONSULTATION

- **THAT** the Education Department adopt a curriculum that responds to Niue's needs

GOVERNMENT DEPARTMENT CONSULTATION

- Environmental education of adults a key gap

PROGRESS SINCE 1992

- Environment Education Officer appointed within Department of Community Affairs
- Primary school initiatives
- Campaigns such as Year of Sea Turtles and Coral Reef

- Waste management campaigns

WORK STILL REQUIRED

BENSON 1992

- Incorporate environmental education into the whole curriculum
- Emphasize environmental education in training of teachers
- More resources adapted for Niuean situation
- Ethno-botanical study be carried out to provide information on plants and their cultural uses
- NGO's and community leaders be provided with training to cater for information needs of village groups
- Ongoing community environmental awareness programmes maintained in villages

NBSAP

Theme 7: Education and Public Awareness

Action 1: To provide a public education programme to increase understanding of the sustainable use of natural resources.

Action 2: The Health Department to continue to educate the public on proper ways and means of managing waste at home, on community buildings and village surroundings.

Action 3: Develop active national and village environmental education campaigns focused on sustainable management and utilisation of forest resources.

Action 4: Provide more information for tourists and Niueans returning overseas on which species are fully protected under CITES which may not be imported into signatory countries (e.g. coral, clam shells, turtle products).

Action 5: Enhance and support the "Keep Niue Clean" awareness program.

Action 6: Educate people on the importance of retaining the knowledge of traditional practices associated with biodiversity conservation.

DISCUSSION

There is a good deal of environmental education being delivered in primary schools though more local material is needed. The secondary curriculum follows the New Zealand one in which this subject is given greater emphasis. The priority then seems to be the provision of information to adults to allow them to make better informed decisions about how they use the nation's resources. Many of the environmental concerns identified, such as over-harvesting of inshore marine resources, of uga, lupe and peka, the poor use of land and felling of more forest, can only be addressed through individuals altering their actions. In order for them to be expected to do this, they require good information on the likely consequences of the different options available to them. This information needs to be relevant to Niue's own situation and usually presented in Niuean.

5.5 TRADITIONAL KNOWLEDGE AND PRACTICES

CONCERNS IDENTIFIED

LITERATURE REVIEW

UNCED REPORT 1991

- “tapu” concept of conservation to extend to legislation

SOE 1993

- Need to maintain traditional social structures and subsistence economy.

NEMS 1994

- Traditional systems for resource management and the knowledge on which they were based are beginning to be lost – cash economy – erosion of traditional authority

NBSAP 2001

- Gradual and continual loss of traditional knowledge of conservation and environmental management
- Low priority given to maintenance of traditional knowledge within some Departments and school curricula

CIVIL SOCIETY CONSULTATION

- **THAT** mechanisms to protect traditional knowledge be designed and implemented
- **THAT** guidelines on access to benefit sharing be adopted to ensure benefits to traditional owners
- **THAT** regulations for access to genetic resources be enacted

GOVERNMENT DEPARTMENT CONSULTATION

- Ensuring fair benefit sharing from access to genetic resources
- Policy and guidelines for access to genetic resources and benefit sharing.

PROGRESS SINCE 1992

This issue has developed over the period. Initially individual nations felt rather powerless to protect their own intellectual property, their traditional knowledge of medicinal plants and so forth. However, regional programmes have helped empower countries to take control of this issue more recently.

WORK STILL REQUIRED

- That mechanisms to protect traditional knowledge be designed and implemented (Civil Society priority)

- Draft and enact Bio-prospecting regulations to protect traditional knowledge applicable to the use of the biological resources of Niue (NBSAP Action).
- Adopt the draft Access to Benefit Sharing (ABS) guidelines in consistence with the regionally accepted “Access Laws Checklist” and “Guidelines and Access to Genetic Resources in the Pacific Island Countries”(NBSAP Action).

DISCUSSION

The key activity required is to put drafted measures into police and then monitor them. An awareness campaign is needed so that individuals understand that the system is there to protect their rights and thus support it.

TAGALOA TO CHECK AND BUILD....AND INSERT CIVSOC INPUT

SECTION 6: ECONOMIC CONCERNS

This review concentrated on environmental concerns, which flowed through into social concerns in terms of how the environmental ones could be addressed. Economic concerns are important considerations in the background, for they can affect the pressures put on the environment. However, they were less relevant to the current terms of reference and thus not actively pursued in consultations or literature review. A few issues were raised and placed in this category in Civil Society consultations as follows:

POPULATION

Population decline was mentioned as an issue in the SOE and the NBSAP noted that though it may be reducing pressure on natural resources, it made it harder to sustain Conservation Areas and the infrastructure needed for sustainable development. Fisheries staff considered that people might believe that the smaller population could not over-exploit their natural resources when in fact they could.

CIVIL SOCIETY CONSULTATION

- **THAT** there be a focus on opportunities/incentives to slow or reverse de-population and brain drain effects

(But note the following issue raised in the NEMS: Taxes or subsidies are presently supporting activities, which damage ecosystems or natural resources)

RELATIONSHIP WITH NEW ZEALAND

- **THAT** the need for a definitive and descriptive partnership between Niue and New Zealand be addressed to reflect a stronger relationship (Civil Society)

LAND TENURE SYSTEM

- **THAT** the Land Tenure System be reviewed to investigate ways of attracting overseas investors

TECHNOLOGY

- **THAT** there be continuous training especially of employees of marketing and business to upgrade skills and knowledge on technology

ANY DISCUSSION FOR THIS SECTION?
WHAT OF THE STRATEGIC ACTION PLAN???

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- Public Works Department, Corporate Plans 2001/2002, Government of Niue

Appendix 1: WORKSHOPS FOR CIVIL SOCIETY

These workshops were conducted by Tagaloa Cooper and Judy Nemaia of the Environment Division, Department of Community Affairs and their write-ups are reproduced here with kind permission.

Participants:

National Council of Women

Beckys Tauasi

Niue Island Organic Farming Association (NIOFA)

Aokuso Pavahi

Ahohiva Levi

Bill Vakaafi

Niue Church Council

Rev Matagi Vilitama

Niue Fisherman's Association

Uhotau Pasisi

Cedric Tutaki

NISANOC (Niue Sports Body)

Alan Tano

Conservation Area Coordinating Committee, Huvalu Project

Pokotoa Sipeli

Masani Togiamana

Niue Youth Council

Amanda Heka

Niue Growers Association

Hunuki Hunukitama

Morris Tafatu

Taso Tukunui

Niue Tourism Organisation

Herman Tagaloailuga

Hakupu Cultural & Heritage Park

Bradley Punu

Misa Kulatea

Pitasoni Tanaki

Niue Woodcraft
Sonia Tafatu

Village Council Representatives
Atalase Tauati (Avatele)
Falefoou Siavale (Namukulu)
Sunlou Freddie (Hakupu)
Snow Touna (Alofi North)
Moka Talaiti (Vaiea)
Lofa Rex (Alofi South)
Logopati Seumanu (Liku)
Maryanne Talagi (Makefu)
(*Bill Vakaafi (Mutalau)* was listed earlier as a NIOFA representative)

Private Sector
O'love Jacobsen

Meeting Record:

[This will be added by Tagaloa Cooper from the write-ups to the workshop as tables using the headings, Environment, Social & Economic]

Summary of Prioritised Concerns:

ENVIRONMENT

1. **THAT** due to lack of accurate scientific data regarding the safety of the water lens, a competent survey be conducted to identify the effects of “development”, and to address if necessary, ways of improving the quality of freshwater.
2. **THAT** the Environment Bill be enacted
3. **THAT** a more stringent policing method be used to deter illegal hunting of peka and lupe outside the prescribed seasons sanctioned by Cabinet.
4. **THAT** all dwelling houses and work places with asbestos roofing be replaced, i.e. re-roofing
5. **THAT** new protected areas be established for marine and land based natural resources.
6. **THAT** mechanisms to protect traditional knowledge be designed and implemented

7. **THAT** guidelines on access to benefit sharing to ensure benefits to traditional owners, be adopted
8. **THAT** Regulations for access to genetic resources be enacted

SOCIAL

1. **THAT** the Government be realistic in its policies to counter de-population and to concentrate resources to improve standard of living of the Niueans residing in Niue.
2. **THAT** there is insufficient initiatives for capacity building in all Government Departments
3. **THAT** the Education Department adopt a Curriculum that responds to Niue's needs
4. **THAT** the Health Department design and implement programmes to promote a holistic approach to healthy lifestyles that will complement the Moui Olaola Program
5. **THAT** water quality tests be carried out

ECONOMIC

1. **THAT** there be a focus on opportunities/incentives to slow or reverse de-population and brain effects
2. **THAT** the need for a definitive and descriptive partnership between Niue and New Zealand be addressed to reflect a stronger relationship
3. **THAT** the Land Tenure System be reviewed to investigate ways of attracting overseas investors
4. **THAT** a research be carried out for marketable alternative crops
5. **THAT** there be continuous training especially of employees of marketing and business to upgrade skills and knowledge on technology

Appendix 2: DEPARTMENTAL CONSULTATIONS

People consulted:

Department of Community Affairs (DCA) 13/12/01 pm

Tagaloa Cooper, Environment Officer

Sione Talagi, Environment Education Officer

Department of Agriculture, Forestry & Fisheries (DAFF) 4/12/01 am

Sauni Togatule, Director

Brendon Pasisi, Government Fisheries Adviser (& 10/12/01 pm)

Wendy Cover, U.S. Peace Corps (13/12/01 pm)

Department of Health (DOH) 4/12/01 pm

Dr Andrew Morgan

Sione Hetutu

External Affairs & Acting Secretary to Government (EA/SOG) 5/12/01 am

Crossley Tatui, Director (EA)

Education Department (ED) 5/12/01 am

Kupa Magatogia, Director

Public Works Department (PWD) 6/12/01 am

Deve Talagi, Director

Andre Siohane, Head of Water Division

Department of Justice, Lands & Survey (DJLS)

Ahohiva Levi, Registrar of Lands 6/12/01 pm

Coral Pasisi, Environment Planning Officer 12/12/01 pm

Niue Meteorology Service (NMS) 7/12/01 am

Sionetasi Pulehetoa, Director

Meeting notes:

Note: Square brackets [] are used to denote information or comments added to the report after the meetings, not discussed at the time, or points needing following up.

Community Affairs (Environment Unit)

The Environment Unit was formed with the appointment of a single Environment Officer in 1992 as a result of UNCED (either to assist in preparation and reporting, or as an outcome [which?]). It was housed in Community Affairs because of the commitment of

the Director of the Department at that time and a feeling that no-one else wanted it as it was seen as likely to stand in the way of progress.

The main concerns are reflected in the Unit's work programme (Appendix 5). It tends to be largely reactive, being the focal point for different environmental initiatives particularly those regional ones through SPREP. However, Niue is unique and more country-driven approaches are required.

A priority is the continuation of the Huvalu Conservation Area project now that the South Pacific Biodiversity Conservation Programme's (SPBCP) support is ending, with no guarantee of ongoing sustainability. This project is significant for several reasons. Firstly, it represents the first time that the Government has acknowledged the need for conservation and conservation areas through its endorsement of the project and the establishment of a Coordinating Committee involving Directors of different Government Departments and tourism. Secondly, the project covers a very large area in proportion to the land area of the country (the largest of any project in the programme) so it has the potential to conserve much of its biodiversity. Thirdly, it represents the first role model for a conservation area in Niue. In this respect it demonstrates the value of the tapu approach and of strengthening traditional conservation practices such as this. Recent Civil Society workshops have confirmed that people recognise tapu provisions more than they do by-laws or regulations.

An application has been made to the NZODA PIE Fund [define] to support the continued monitoring of peka, lupe and other birds. The income-generating activities, particularly the coconut oil production have been the big successes of the project – the second village, Liku, is not joining Hakupu in this venture after its alternatives such as nonu production had difficulties. There has been interest in the oil from overseas markets and not enough production to yet meet this demand.

However, the main issue is the lack of enacted legislation. An Environment Bill is in a draft form indeed it has been in this situation for c8 years – i.e. since the completion of UNCED. A final draft is with the Minister's office, after a full process of consultation, from which it should go to Cabinet. It creates an Environment Council [check], which should assist in an integrated, mainstream environment effort. The Bill will work through the issuing of regulations.

Education and raising public awareness is a continuing priority. An Environment Education Officer position was created in 1994 and he has since been involved in a wide range of activities, including assisting other Government agencies. These have included annual environmental campaigns in June each year associated with World Environment Day and regional campaigns through SPREP for waste, water, sea turtles, etc. The older people are now more receptive to conservation messages, partly through what their children have learned.

Other important ongoing issues are too much forest clearance for agriculture and waste management – the aluminium can recycling programme is the success story here – used

as an example to other countries. Managing information is also important, e.g., the State of the Environment database project.

New concerns that have risen more recently include the protection of traditional resources, access to genetic resources and benefit sharing. An Access to Benefit Sharing (ABS) workshop in 1990 led to the raising of this issue locally when the Environment Officer made a presentation to the first National Workshop of the NBSAP process. This made people aware that this was a big issue for the whole region and that it was not a lost cause – there was an opportunity for Niueans to protect their own knowledge and resources. Guidelines including a permit system were drafted at the ABS workshop and draft regulations have been prepared for Niue. A traditional medicines committee has been formed at the Niue Hospital to integrate this with modern medicinal practice.

Biosafety is an issue for which the Cartagena protocol is very important, offering mechanisms for capacity building in the Pacific. Niue is only a single site so there is limited response potential in the event of serious problems from introduced organisms.

Agriculture, Forestry and Fisheries

Agriculture policy has largely had an income-generating focus rather than one on sustainability, examples being the Moui Faka Niue Scheme (a key aim of which was to increase agricultural production for export). The NEMS report shifted the outlook somewhat but the primary focus is still largely unchanged. Reducing overseas aid (e.g. from New Zealand) was identified as one factor behind this.

Some key concerns have been high levels of deforestation associated with unsustainable land clearance, the use of pesticides (e.g. with lime/passion fruit programmes) and unsustainable resource use in general. There are almost no management guidelines for the use of natural resources, such as the pigeons or flying foxes, typically because of the lack of baseline information or expertise or capacity. A key issue is the way that the community looks at resources not optimising their use in a sustainable way. It will be important to link environmental concerns to poverty alleviation and sustainable development.

Key strategies include the recently approved Forest Policy, though its development cannot really be linked back to the Rio Summit, and an Agricultural Policy.

Some key concerns are being addressed:

- (i) Removal of Persistent Organic Pollutants, through a new SPREP-funded programme.
- (ii) Invasive Species Project through SPREP
- (iii) Actions have been taken to address the Cartagena (Biosafety) Protocol.

Recent SPOT satellite imagery is being finalised to allow assessment of recent changes in forest cover by comparison with 1994 figures. However, major gaps remain such as the assessment and management of inshore and coastal fisheries.

Fisheries

The key concern is the unsustainable use of inshore fish resources including shellfish, deep-water snapper & cods, clams, lobsters and crabs, and reef fish (e.g. parrot fish, surgeon fish). (Note: Uga, though more terrestrial, would be included in any inshore fisheries management as they are covered under fisheries legislation). No guidelines exist for the management of the different inshore fisheries and there is limited baseline data – only from the 1990 Fisheries Resources Survey (Dalzell et al. 1993) and the more recent studies at Anono Marine Reserve (Labrosse et al., 1999). Because of the relatively low population the people do not see depletion of resources as an issue and need information on the importance of managing them as declines in availability are evident. Though there are some regulations in place (e.g. size restrictions), enforcement is very difficult particularly as few fish ever reach a formal market.

Another important issue is pollution including land-based sources and oil spills. Problems could include leachates from the rubbish dump or septic tanks sited near the coast and waste from visiting yachts but there is a lack of monitoring. **[Obtain Cornforth report on Coastal Zone Management]**. Waste Management was identified as a priority for possible work under the IWP in 1997 and Niue contributed its elements to a regional programme to be submitted for GEF funding. However, one of the purposes of the current report is to revisit the country's concerns as this may no longer be the priority.

Work needed to deal with the first concern includes baseline surveys, finding out more about the biology of the different species to be able to define a sustainable take, working out how to manage (through input or output controls) and establishing monitoring. There has been a request in with the South Pacific Commission (SPC) for technical assistance with the development of an inshore fisheries management plan. If this topic was to be the subject of a pilot project, it could start with one or two village communities, or cover the whole island.

Other issues include identifying the potential of the offshore reefs, Beveridge & Antioch Reefs, and ensuring their protection. (Some regulations were put in place when a boat ran aground on the former but there are some questions about the standing of these). Possible threats of invasive pests arriving in ballast water should be addressed in an Invasive Species Action Plan being produced by Agriculture. The offshore elements on the IWP centered around the management of tuna stocks are being dealt with by Forum Fisheries Agency (FFA) and SPC. The FFA is conducting a review of country provisions (legislation, etc.) tied into international conventions.

Funds are in place for marking the Anono Marine Reserve, which two villages have agreed to and accepted in practice. A programme is needed for the community to monitor the reef resources and then scuba divers will be needed for the rest. Traditional conservation practices put in place by communities are receiving more consideration these days and have wide support– e.g. closing an area to fishing as a conservation measure to ensure that it provides food for as large feast that is coming up. Civil Society

has also referred to a return to traditional fishing methods, e.g. the use of a single hook. This suggestion seems to have partly stemmed from issues arising from the presence of the Tuvaluan community of Vaiea – these people traditionally have had a greater emphasis on fishing and often no other source of employment. So they have been fishing almost every day for much longer periods than Niueans would, raising concerns about fish stocks in certain areas. However there seems better ways to address this issue rather than requiring the use of single hooks.

Additional comments from the US Peace Corps volunteer concerned land-based pollutants and invasive species. Lack of concern about pollutants reaching the marine system as opposed to the freshwater lens has led to the deliberate siting of possible sources such as the rubbish dump and laundromat on the coast. Can paraquat enter the sea, as there is little soil in which it can degrade? Invasive species arriving in ballast water is not a major concern as ships currently take on very little cargo in Niue and thus do not need to discharge water. It is planned to tidy up the regulations. Crown of Thorns starfish are monitored but do not appear to build up into high enough numbers to cause problems on Niue.

Health

A Health Improvement Plan completed in November 2001 provides an updated strategy identifying issues and detailed targets for future work. This is part of an NGO-based “Niue Moui Olaola” (Healthy & Safe Niue) project, which is due for review shortly by NZODA. Waste management was a particular focus with 12-months work by an overseas expert leading to the development of a national Waste Management Plan (ref?). Parts of this plan are being implemented and other elements taken to donor agencies for possible funding. Overall, the Department has tended to operate without a clear corporate strategy because of frequent changes at senior level.

Issues discussed included:

- Water quality – monitoring of freshwater continues but though equipment was obtained for monitoring sea water (faecal coliforms, etc.) in the past this is not currently undertaken
- Management of the rubbish dump – a site for a new dump has been identified inland – the present coastal site may have led to discharges into the coastal zone
- Fish poisoning – this has generally been rare but recently there have been several cases of suspected ciguatera poisoning from reef fish collected in the vicinity of the wharf area – waste discharged from visiting yachts is one possible cause being investigated
- Asbestos – no cases of asbestosis are known. The way asbestos removal from buildings is managed is highly variable, some using full protective clothing and equipment and others nothing
- Dump for contaminants – a designated dump operates near the airport for disposal of contaminants like asbestos.
- Pesticides – no cases of health problems from pesticide use have been reported except for some deliberate self-administration.

[LOU – check insertion of traditional med. Comm.. – status.]

External Affairs

The meeting focused on identifying sources of information on Government policies and plans of relevance to the environment to be consulted during the visit. The Pacific Regional Submission to the preparatory process to WSSD was provided to ensure that the national assessment had some consistency with this.

LOU – more info. To go in here i.e unit responsibilities

Education

A key issue now is the education of the older generation in environmental matters. Over the past ten years, there has been a big change for education taught in schools, usually as part of Social Studies. However, children then go home and see their parents sometimes doing the opposite of what they have been taught. The older generation's style is to learn by doing, rather than reading or listening to the radio, so practical programmes are needed operating in their community. In the current user pays environment people will work hard if there are incentives however small they may be.

Primary schools have become involved in many practical environment projects in recent years, recycling rubbish and in particular aluminium cans, collecting of tyres (to prevent them being breeding grounds for mosquitoes and use them for planting) and composting. Waste management has been a particularly strong area in recent years as there were funds for education available and an expert on the island for a year.

A problem now is obtaining sufficient resources to address issues. They are frequently allocated on a population basis, and though Niue has smaller numbers of people they still face the same issues as larger countries. Maintaining programmes is difficult with resources often available for two or three years and then no follow-ups.

Public Works Department

The key issue is groundwater contamination an issue with which close liaison is maintained with the Health Department. A model for the groundwater lens is lacking – not completed during an AUSAID project and a request is now in with SOPAC (European Union is providing the Commission with funds for water-related projects in the region). Also requesting a mini-lab from them to enable testing of chemical residues (currently only testing is that done by Health on bacteria). Such testing did occur in the past during a 2-year project involving an UNDP consultant on the island and at this time, a bore near the Agriculture Department's farm was shut down due to excess nitrogen derived from leakage of stored fertiliser. The shipment of alpaca held at the Quarantine Farm in the past were a potential concern as a concentrated source of animal wastes and of fertiliser used to maintain the grass for them.

Discussed use of house roof water catchments. It used to be a policy that all new houses or extensions had to catch and store their roof rainwater – Cabinet order in the 1980s – however this lapsed when the new system based on bores into the freshwater lens was developed. Calculations suggest the lens provides a very large potential supply.

Septic tank outflows are potential sources of contamination. Tank standards, and those for pit latrines where there is no piped water supply, are set out in the Niue Building Code (1990). [The code describes the use of absorption trenches or soak pits for receiving the outflows of the main tank]. A US team of engineers considered this issue among many within a regional Disaster Management project and their report is expected to contain recommendations for alternate designs with double chambers. Research is also proposed to monitor and look at recycling options for tank outputs.

Land clearance was discussed. The increased number of access roads to plantations was seen as an environmental concern, allowing people access to areas they did not previously use increasing hunting pressure on lupe and peka for example. Under the current system, Village Council applies to Public Works to construct a road and the Government will fund this if there is seen to be sufficient public benefit. Costs will depend on issues like whether the village will provide land free for the extraction of makatea (limestone rock) for road construction. Most roads are requested to access land for taro cultivation but the supply of this crop is not well coordinated. Much of the time there are too many plantations and no demand so product goes to waste, but at other times there is not enough to meet demand.

The use of the larger D8 bulldozers for land clearance was discouraged when Deve became Director c.3 years ago because of their destructive abilities (can knockdown large trees, etc.) in favour of the smaller D6's (though currently D8 use has increased as a D6 is broken down). PWD would like to cut back the rounds made of the island by the two bulldozers from four to two a year. There is no planning or policy in place regarding land clearance and if a village requests it then it happens. There is a standard system for establishing the main tar-sealed roads, which has minimum clearances of vegetation on either side aimed at reducing maintenance costs. This caused difficulties during the upgrade of the Hakupu/Liku road when villages wanted more trees left and this did occur when the road passed through the primary forest of the reserve [conservation area].

The use of multiple makatea pits for rock extraction was not seen as an environmental concern [though others have raised this].

There are proposals to turn the existing rubbish dump into a transfer station with a new dump at Vaiea with the station being-concrete lined. The placement of the existing dump on the coast is seen as an advantage as any chemicals leaching out would be dispersed in the ocean rather than possibly entering the freshwater lens.

EIA's should be undertaken for all development projects and are usually at Ministers' request. One was done for the new Commercial Centre by a consultant from Kiribati employed by SPREP. Others are done in situations where they do not appear needed, e.g. for the re-siting of the Post Office.

Justice, Lands & Surveys

1/ Registrar of Lands

The key piece of work relating to the environment has been the AUSAID-funded Land and Marine Resource project. It included the development of an Environmental Planning Strategy including guidelines for sustainable development, for town and rural planning. However, these have no teeth or effect without the necessary policy and legislative instruments. Draft legislation has been prepared but not finalised. The Department has been re-structured in response to the strategy, forming three divisions of Court, Administration and Lands, though the latter is short-staffed with a proposed technical assistant for the Environment Planning Unit to first undergo further training – a Diploma in either or both GIS and town planning.

The Department has prepared a proposal for the establishment of a large computer server for internal/external networking in conjunction with SOPAC. This may be considered by AUSAID. A key need is the storage of data in an integrated, layered way. One element would be land titles - a NZ-funded project which has ceased made a start on titling the country's land (under 12% done) and ideas are being sought as to how this can be done in the future. Other elements would include conservation areas, tapu areas, and more small-scale information such as town and rural village infrastructures. A survey locating power lines, drains, etc. was done in Alofi in 1993/94 but needs repeating in outer villages.

Assessing progress since the Rio Summit it appears that there has been no continuity of effort. A framework should have been established back then but was not and initiatives came to a halt. Things started up again around 1998 with many projects/programmes but structural deficiencies have limited what has been achieved. There needs to be some form of co-ordinating body at the top such as a Sustainable Development Commission which links together the different programmes and implementing units with External Affairs acting as a conduit to outside agencies. Insufficient monitoring of national performance against stated objectives occurs. Within the environmental area there is scope for uniting activities under a Land & Resources Department.

The following themes were suggested to encompass present concerns:

- Agricultural development
- [Lack of] Environmental awareness on sustainable development
- Combating poverty
- Demographic dynamics and sustainability
- Status of biodiversity
- Health
- Water
- Protection of atmosphere
- Seas and oceans
- Waste Management
- Capacity building and technological development

- Information dissemination and institutional strengthening

A 3-year Corporate Plan for DJLS was developed to coincide with the term of Government. Such plans provide a way of evaluating the performances of Heads of Departments.

2/ Environment Planning Officer:

A key issue is the disjointed administration of the country's environmental mandate – e.g. Environment Unit in Community Affairs, Environment planning unit in DJLS, waste management in DOH, water monitoring with DOH and PWD. In addition, there is a lack of coordination of the management of sustainable development – planning is split with economic planning in Treasury, resource planning in DJLS, and infrastructure development with Public Works.

The planning project has established a process, which should ensure that all developments are considered in social, economic and environmental terms. The Cabinet has given its support to the process through a minute of 14/3/2000, which “accepted the products of the LMRUPP, as a suite of tools to assist in the co-ordinated development of Niue. This is in recognition that they are not yet final and at this stage does not commit the Government of Niue.” Several key activities need to take place before finalisation is possible. (Though physical planning was identified as a priority in the NEMS and earlier, there has never been a regionally funded programme so it has been difficult to make progress.) Activities needed are:

1/ Consultation

Draft planning guidelines were circulated to Government departments and workshops are needed to finalise these

‘Local Area Plans’ for village lands were drafted with the involvement of the different villages and further meetings are required to consult and finalise these

2/ Awareness Raising

A workshop is required in order to discuss the benefits of having planning guidelines and controls

3/ Baseline data

Baseline data is needed in a number of areas to be able to plan development and allow monitoring. There is little information on coastal and marine resources – the LMRUPP largely only covers land for this reason. Now that the GIS mapping capability exists coastal and marine data can be stored in a useful way. In addition, more knowledge is needed of the freshwater lens and its outlets, so that developments can be located to ensure no contamination or local over-use of the water supply.

4/ Networking

The GIS system needs to be networked to be available to more Departments. (Forestry is already making good use of a copy).

However, the planning process has not yet been finalised or supported by legislation (An Environment Planning Act has been drafted) it is occurring to some extent. Any

developments go through the land registry so that the Environment Planning Unit usually has an opportunity to comment on them.

Other major environmental concerns are:

- a) Water supply – e.g. dumping in caves giving access to the lens
- b) Coastal and marine management

Meteorology Service

The Meteorology Service used to be part of Telecom but since 1905 was separated and moved to its new location at Hannan Airport in 1997. Since 1992 there has been substantial donor involvement in upgrading the facilities and programmes to the point that automated recording and reporting is in place. A switch to computer operation is made at 4 pm each day and from then reports are submitted automatically every hour by e-mail to Fiji before New Zealand and from there to Melbourne and the (GTS) international recording system. There are three permanent staff plus one on contract as the Climate Change project coordinator.

Niue's project within the United Nations Framework Convention on Climate Change (Government of Niue 2000) has been a major activity for the service since 1998. A top up project includes three sets of activities for year 2002 which are:

- (i) Running a National Awareness Workshop
- (ii) Identifying and prioritising technology and technology transfer needs for Niue
- (iii) Enhancing systematic weather observation systems on Niue

All three activities are to be carried out in partnership with SPREP, SOPAC and AOSIS.

Another activity that the service is involved in at present is the seeking of funds to install a SEA-FRAME sea level monitoring tide gauge to measure the variation of Niue's tidal movements and Sea Level Rise. Steps are already in place by the Government of Niue and the Government of Australia through AusAid towards the implementation of this project.

The NZ Meteorological Service has provided assistance since 1995 with NZODA funding including annual visits to check and upgrade recording instruments.

Some additions are being made to the rainfall recording system within a US-funded project. A gauge in the centre of the island is desirable, as all recording is currently done around the coast but considerable funding would be needed to set this up, including cabling if it was to be automated.

One specific environmental concern is the disposal of instruments, including thermometers, containing mercury. These are currently being stored until such time they can be transported off the island.

Niue Tourism Office

The Niue Tourism Industry through the re-establishment of the Niue Tourism Office under the Niue Tourist Authority Act of 1995, reintroduced itself into the global tourism industry as a “soft adventure destination”.

Niue’s presence as a destination was further promoted to niche markets such as diving, fishing, sports (VFR), culture & people and eco-tourism markets primarily in New Zealand & Australia as its major markets.

The role of the Niue Tourism Office is to ensure that promotions and marketing of Niue does not disrepute the national goals and strategic plans of the country. Taking into account, the national environment concerns and strategies eventuated in the drafting of an Accreditation Scheme for the Tourism Industry ensuring that certain Environment Guidelines are followed by the Industry. The following is a brief of the Environment Guidelines and its importance in the Tourism Niue Accreditation Scheme

NIUE ISLAND TOURISM ACCREDITATION SCHEME ENVIRONMENTAL MANAGEMENT.

Introduction:

These guidelines have been prepared to assist businesses that are members of the Niue Accreditation Scheme to work towards responsible environmental management. The Scheme is voluntary, aimed at maintaining the reputation of Niue as a quality destination for overseas visitors.

Why address Environmental Concerns

An important component of the Niue Tourism Accreditation Scheme is responsible environmental management. Two objectives in the Niue Tourism Charter specifically relate to environmental responsibility. These are:

- To adopt environmental friendly-type practice to minimize exploitation of natural resources and to reduce adverse effects on the environment.
- To maintain and enhance the natural beauty of Niue.

Some operators may be wondering why environmental concerns are relevant to the Niue Tourism Industry and why these two specific objectives have been included in the Tourism Charter.

There are two main reasons:

1. Niue is a very attractive tourist destination and its environment is very fragile. We depend on our natural resources such as water and clean and pristine waters. If we have an influx of tourists into the island, we have to be mindful of our resources and

conserve them. Tourists will not visit destinations with a fragile environment. It is therefore in a spirit of enlightened self interest that the tourism industry should address its environmental responsibilities and contribute towards maintaining and enhancing the natural beauty of our little Rock of Polynesia.

2. Individuals and organizations around the world are increasingly aware of the various threats to the environment. This awareness is translated into higher expectations and demands of the environmental management practices of the tourism industry. In reaction to these trends, operators are now making an effort to reduce their impact on the environment. Including environmental criteria in the accreditation scheme provides credible and tangible evidence to visitors of the responsible approach to environmental management taken by the tourism industry.

What environmental issues should be addressed?

Four key factors have guided the selection of environmental issues for inclusion in the accreditation scheme.

Environmental issues have been included in the scheme that are:

- Necessary for the achievement of the two environmental objectives of the Tourism Charter;
- Essential for any comprehensive and credible environmental management scheme; and
- Relevant to the industry

As a result, six broad environmental issues have been selected for inclusion in the Niue Tourism Accreditation Scheme. These are energy, water, waste, discharges, hazardous substances and natural ecosystems.

The following section discusses the ways in which the tourist industry is associated with these abroad environmental issues and the contribution of the industry to any adverse environmental impacts.

WASTE;

All tourist activities generate waste – it is the form and quantity of waste, which varies. Solid waste includes any unwanted or discarded items requiring disposal and can include materials such as cardboard, paper, plastics, glass, metals, garden waste, kitchen waste, textiles, and waste building and construction materials. The storage, transfer and disposal of solid waste have the potential to create adverse environmental effects. These effects vary with the practices used. For example, local reuse and recycling causes minimum environmental effects while landfill disposal causes contamination of the freshwater and marine bodies, land contamination, air pollution, and visual nuisance. In an island with space constraints, the effects of landfill-based disposal are even more significant. Responsible management practices include reduction, reuse, recycling and recovery of waste followed by the responsible management of any residuals.

WATER;

Reliable supplies of good quality drinking water are essential for everyone on the island – local and visitors. The majority of the island's water is from the underwater supply. There are many factors, which can affect the reliability of supply, quantity and quality of water. These include natural and human factors such as drought, storms, high consumption, leaks in the network and contamination of water. Tourist activities that consume water include toilet facilities and the provision of drinking water. Other activities, such as accommodation will also use water for laundry, washing, recreation and irrigation. Consumption of water also has energy costs through pumping and in some cases through heating. Any efforts taken to protect the quality of supply and minimize the wastage of water will benefit locals and visitors.

ENERGY;

All tourist activities consume energy for lighting, heating & cooling, for appliances and equipment and for transport. Forms of energy used in Niue include non-renewable and renewable sources. Solar power is a renewable energy source with minor impacts on the environment. It is commonly used to heat water in the Niue tourism industry. Electricity, petrol, and diesel are non-renewable energy forms. The extraction, generation, supply and use of non-renewable energy forms have the potential to adversely affect the environment. Adverse effects can include air pollution, contribution towards the threat of global warming, and water and soil contamination from oil and fuel spills. Reducing energy consumption helps to reduce these adverse environmental effects. Given the high costs of energy locally, it also makes sense to conserve energy to reduce energy costs.

HAZARDOUS WASTE;

Many hazardous substances can be very useful in everyday running of a business and all tourist activities use hazardous substances at sometime during their operation. Hazardous wastes include those materials that have flammable, toxic, corrosive, or explosive properties that could cause adverse effects on the health of people and ecosystems unless stored, handled and disposed of with care. Hazardous waste materials include batteries, pesticides, chemical cleaning agents, oil, petrol, paints and solvents, and CFC's. Spills or uncontrolled dumping of any hazardous substances can create significant adverse environmental effects, contaminating soil, water and natural ecosystems to the point that they cannot be used for extensive periods. Many hazardous substances are persistent and are concentrated up the food chain. These very significant adverse effects have to be managed responsibly. Use of many hazardous substances such as PCB's is now controlled through international agreements. The tourism industry can contribute towards minimizing these adverse effects by reducing their use of hazardous and ensuring responsible disposal practices.

DISCHARGES;

All tourist activities generate discharges, which can contribute towards a range of local and global environmental problems. Local problems include the discharge of untreated waste from poorly designed septic tanks or package plants, which pollute water and soil.

NATURAL ECOSYSTEMS;

All activities have the potential to adversely impact natural ecosystems through the removal of vegetation, soil and biological resources. Such impacts affect the habitat value and can affect the integrity and diversity of native species. A number of activities, particularly those involving tour guiding, have potential to affect natural marine and land ecosystems through their on-going operations and introduction of visitors into sensitive locations. Some activities are more damaging than others. Many tour-based tourism activities in Niue could be classified as eco-tourism as the tourist experience is nature-based. Eco tourists are even more demanding of high environmental standards than other tourists. Therefore, management of activities to minimize adverse impacts is crucial if they are to appear credible and sustainable in the end.

It is clear that every sector of the tourism industry creates adverse environmental effects through its use of energy, water, materials, hazardous substances, generation of discharges and impacts on natural ecosystems.

Six environmental goals have been identified to address the six environmental issues. The goals highlight the long-term achievements sought by the industry in the key environmental areas. Realizing these goals will enable the two environmental objectives to be achieved.

- To minimize waste as far as is practical
- To minimize the use of water as far as is practical
- To minimize use of energy as far as is practical
- To minimize the use of hazardous substances and ensure their disposal causes minimum adverse environmental effects.
- To minimize the adverse effects of any discharges
- To minimize any adverse effects on natural ecosystems and to promote the natural beauty of our beautiful 'Rock of Polynesia'.

Appendix 3: CHANGES TO LEGISLATION 1990-2001

Changes to established legislation:

Agriculture Quarantine Act 1985 (Niue)

Plant Quarantine Regulations 1985

Agricultural Quarantine (Disease Control) Regulations were enacted in 1991 to address the eradication of endemic diseases or pests and the control of animals and disinfecting or closing of land in the event of a foreign disease outbreak or threat. It also established fees for the import of animals, animal products and biological products or organisms.

Wildlife Act 1972

A Gazette Notice in 1991 declared the lupe (pigeon) and the peka (flying fox) to be Partly Protected Species except for the period from 1st to 31st December each year.

New regulations:

Pesticides Act 1991

A new Act to regulate the importation and sale of pesticides. This provides for the declaration of substances as pesticides and the establishment of a Pesticides Committee to oversee their management. It deals with applications to import or sell pesticides and establishes standards for their use.

Domestic Fishing Act 1995

Domestic Fishing Regulations 1996

An Act making provisions for the protection of fish covering the prohibition of destructive fishing methods like the use of dynamite, fish poisons (akau Niukini), small mesh nets and of scuba for taking fish. It also include, sections on establishing marine reserves or fono (temporary bans), restricting the take of crustacean with eggs or in moult or below minimum sizes, enabling bans on exports and on Sunday fishing. The Regulations list species (e.g. turtles, marine mammals, live tropical fish) that cannot be exported without Cabinet approval; sets out size limits and quotas for uga (coconut crabs), crayfish, clams and tapatapa (slipper lobster); fully protects certain species (including turtles and marine mammals); and regulates vessel safety equipment.

Niue Tourist Authority Act 1995

An Act to reconstitute the Tourist Authority Board as a Tourist Authority. It states among the authority's functions that 'Tourism projects should be subject to environmental impact assessments and (the) authority should have regard to the Niue environment management strategy (i.e. the NEMS) and other Government policies concerning the environment.

Water Resources Act 1996

An Act to make provision for the investigation, use, control, protection and management of water. It includes identification of the need to ensure adequate supplies; to ensure adequate facilities for drainage, the safe disposal of sewage, effluent and water-borne wastes; the protection of water sources from the intrusion of saltwater; and requires the consequences of development proposals on the environment to be properly investigated and monitored.

Territorial Sea and Exclusive Economic Zone Act 1997

An Act establishing an exclusive economic zone for Niue adjacent to the territorial sea and making provisions for the exploration, exploitation, conservation and management of its resources. One part deals with fisheries management including requirements for plans to address protection of fish stocks and habitats, and prohibition of certain methods like drift-netting.

Pig Control Act 1998

An Act to provide for the control of pigs. It includes requirements for keeping animals tethered or in enclosures and measures for the control of those that go feral.

Appendix 4: ACTION PLAN FOR MANAGING THE ENVIRONMENT OF THE PACIFIC ISLANDS REGION 2001-2004 (SPREP 2000)

This Action Plan adopted at the 11th SPREP meeting in Guam identifies the following key result areas as critical to achieving sustainable development in the region:

1. Nature Conservation
 - 1.1 Conservation Areas
 - 1.2 Ecosystems Management
 - 1.3 Species Protection
 - 1.3.1 Endangered Species
 - 1.3.2 Invasive Species
 - 1.4 Biosafety, Access to Genetic Resources and Intellectual Property Rights
 - 1.5 Traditional Resource Management
2. Pollution Prevention
 - 2.1 Marine Pollution
 - 2.2 Hazardous Waste Pollution
 - 2.3 Solid Wastes, Sewage and Other Land Bases Sources of Pollution
3. Climate Change and Variability
 - 3.1 Strengthened Meteorological Services
 - 3.2 Understanding Climate Change and Variability
 - 3.3 Sea Level Rise
 - 3.4 Impacts and Vulnerability
 - 3.5 Adaptations and Mitigation
 - 3.6 Policy Development on Climate Change
4. Economic Development
 - 4.1 Trade, Investment & Environment
 - 4.2 Tourism
 - 4.3 Integrating Environment and Development
 - 4.4 Populations, Settlement and Urbanisation
 - 4.5 Public Sector Partnerships

Appendix 5: GOAL AND OBJECTIVES OF ENVIRONMENT UNIT PLAN 2000-2001

GOAL: TO EFFECTIVELY MANAGE OUR NATURAL RESOURCES WHILST PROMOTING SUSTAINABLE PRACTICES TO ENSURE INTER-GENERATIONAL EQUITY.

OBJECTIVES:

- 1 Implement the Huvalu Conservation Project Plan and facilitate the phasing out period of the Project.
- 2 To update and implement the State of the Environment Programme.
- 3 To implement the Pacific Region Environment Campaign on Niue.
- 4 To review and improve the Aluminium Can Recycling Programme.
- 5 To present to cabinet and other stakeholders the Environment Act.
- 6 To investigate the feasibility of acceding to other environmental related Conventions and legal instruments.
- 7 To guide further implementation of the Capacity Building for Environmental Management in the Pacific Project. (CBEMP).
- 8 To establish the Pacific Environment Information Network (PEIN Project).
- 9 To provide technical assistance to the project team and guide the implementation of the Biodiversity Strategy Action Plan (BSAP).
- 10 To enhance existing Environmental Education and Awareness Programme through the delivery of new and improved initiatives.
- 11 To review the status of Environmental Impact Assessments (EIA).

Appendix 6: TERMS OF REFERENCE

NATIONAL CO-ORDINATOR WSSD - NIUE

The National Coordinator (NC) will serve as the official Working Secretariat for the project. He/ She will be employed within the Environment Division of the Department of Community Affairs.

The NC shall work closely and in consultation with the CC and the WSSD Focal Point.

The NC shall have full and extensive understanding of the WSSD Preparatory Process both regionally and internationally. In addition, the NC shall continue the work of the preparatory process that has been commenced inclusive of civil society on a national basis.

The NC is required to have a working knowledge and understanding of government functions particularly in the field of environment. The NC is required to have an established and existing working association with Civil Society.

Terms and conditions of employment of the NC will be based on the Niue Public Service Manual and Regulations and special terms shall apply for any extra work that will be performed after normal working hours.

The NC shall follow a set time line for the project and may sub-contract any work to a third party with the approval of the Chairperson of the CC.

Thank you for a job well done sista!

