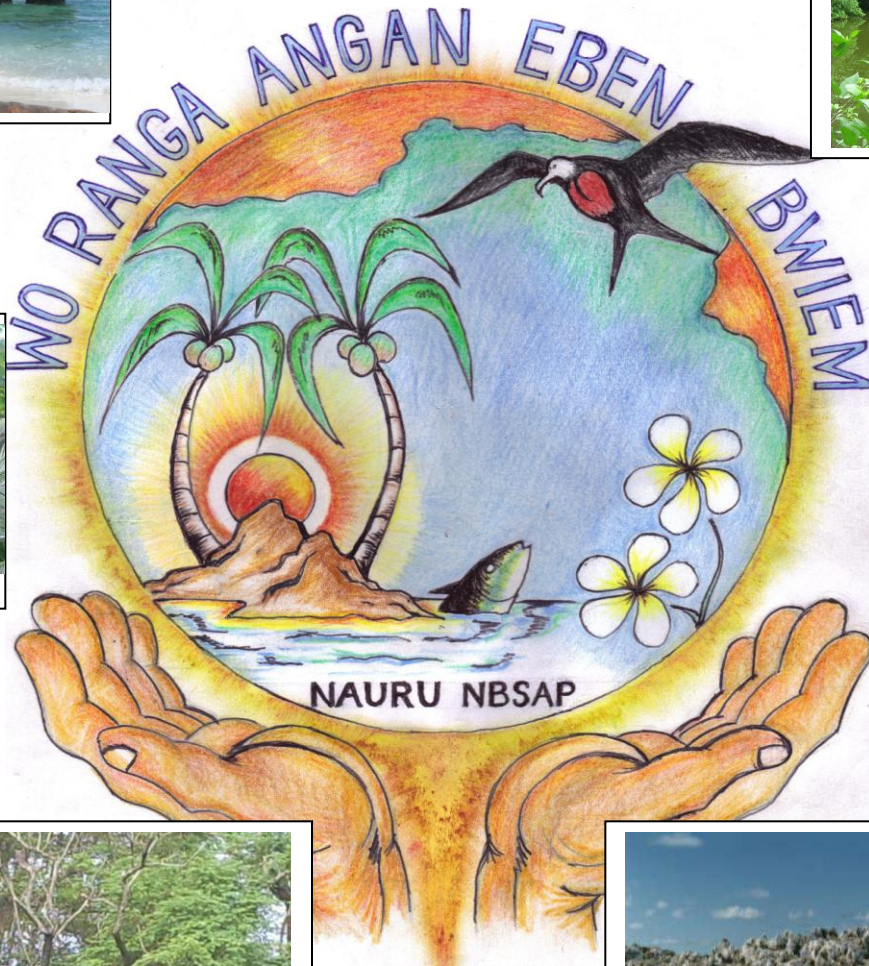


NAURU'S BIODIVERSITY STRATEGY AND ACTION PLAN



Rehabilitate and Conserve

GOVERNMENT OF THE REPUBLIC OF NAURU

NAURU'S BIODIVERSITY STRATEGY & ACTION PLAN

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NAURU VISION FOR THE FUTURE

We are proceeding with the rehabilitation of our beloved island home in three overlapping and interlocking steps – physical, biological and cultural. Each step will be fully integrated with the other two so our process of future development *rehabilitation* and *sustainable development* will be interconnected.

Physical rehabilitation must first deal with the land and water systems. The coral pinnacles will be dismantled, sawed and polished into building materials for homes and buildings. The coral pinnacles will also be crushed to make land fill, land will be graded, catchment areas and reservoirs built for storage of rainwater, and the freshwater underground lens are tapped for sustainable use. As part of the physical rehabilitation of Nauru island, topsoil, which we have stockpiled and carefully preserved, will be spread where it is needed for forests and fields, according to the land use plan that has been developed with maximum possible participation of all Nauruans.

Biological rehabilitation will address the fields and forests, the coral reefs, and the surrounding seas. Areas of biological diversity will be established at strategically placed locations on the periphery of the island, and expanding gradually into the rainforest of tomorrow. Horticultural stations will be built at each of these strategic locations to nurse seedlings into trees, trees into forests, all according to the overall land use plan under development. Papaya and pandanus, beach almond and banana, coconut, orchids, vines and the ubiquitous tomano tree with its richly grained hardwood – all will bloom again. Our rainforest will live again, and with it, the myriad of birds and animals, and the coral reef that is the cousin of the forest, all will live again.

Coupled with the biological and physical rehabilitation of Nauru is the cultural rehabilitation of our people. Our land and culture are united in seamless unified fibre. Our indigenous culture, tied to the land and the surrounding sea, is largely gone, devastated along with the rainforest and the reef. It is the rehabilitation of the land by and for the Nauruans that will restore and define the new Nauruan culture. Nauruans will themselves be responsible for all aspects of rehabilitation and sustainable development, from the design and acceptance of the land use plan, the grading of the land and the polishing of coral blocks for building to the planting and nursing of seedlings for the revitalised rainforest. Due respect must be paid to the culture of the present and future. The very destruction of the culture of the past can be seen as an opportunity to recreate an appropriate culture for the future – and the development of human resources that will represent the foundation of this new culture is our central task.

MINISTERS STATEMENT

In 1992, Nauru ratified the Convention on Biological Diversity. That commitment a bold decision by the Government and people of Nauru, is in keeping with Nauru Vision For the Future, and testimony of our support for the Convention and its principles.

For us Nauruans, the necessity to rehabilitate and conserve the value of our biological diversity and its various components both for the present and future generations is not only a genuine responsibility but also a vital component of restoring and re-establishing Nauruans' close link with the environment. Therefore it is necessary to take advantage of the convention to promote the customary (**eigadey**) principles and beliefs of our forefathers (**eibut eibum**) and their traditional conservation methods and practices of Nauru's biological diversity, in a sustainable manner with minimal threat to species. We will endeavour to uphold Nauru's commitment under the convention, while cognizant of our need for economic survival on our smallness and resource constraints to implement fully the prescribed strategies in this document.

The National Biodiversity Strategy and Action Plan is very relevant and timely for the future, as a mechanism under which we must continue to plan, manage and utilize our biological diversity wisely, and as we proceed with the full implementation of our rehabilitation of Nauru programmes. We also recognise the need to ensure that the implementation of the Strategy Action Plan is undertaken in the most prudent and participatory approach while taking into account the overall views of the community.

In addition, I hope that the production of this document will enhance the knowledge and understanding of our people of the need to preserve Nauru's identity and culture, the natural environment and biological diversity so that it may continue to support the resident population and future generations.

In conclusion, I commend the hard work of the Steering Committee responsible for the coordination of the biological diversity project, including the Community and the Non-Government organizations for their dedication. I sincerely hope and I would like to invite every Nauruan in the world today and in future to play your part in conserving the biological diversity resource on the island, Nauru.

Honourable Frederick Pitcher MP
Minister of Commerce Industry Environment

EXECUTIVE SUMMARY

Nauru's Biodiversity Strategy and Action Plan is an integral component of its National Environment and Development Management Strategies—its response to its own, *Nauru Vision for the Future* and to the world wide call from the Earth Summit of 1992 for nations to re-examine their developments and make changes that are necessary to turn the tide of environmental degradation and ensure sustainability in human development.

The Strategy outlines the state of Nauru's biological resources and actions to control their degradation and achieve sustainable development. It is Nauru's foremost expression of commitment to the Convention on Biological Diversity which it ratified in 1992.

This NBSAP was formulated through a multi-sectoral consultative process involving representatives of various in-country governmental and non-governmental organisations as well as national and international experts. In particular, advisory services were given by representatives of Environmental Consultants Kiribati, the Secretariat of the Pacific Regional Environment Programme and United Nations Development Programme (Suva Office).

From the collection of a broad range of information and views, the stakeholders have extended the exercise to the allocation of responsibilities and assignments to groups of organisations. These groups, which form the stakeholders' consultation group, have achieved the compilation of currently available base line information that has provided a comprehensive background to the Strategy.

Funding for the work has been generously provided by the United Nations Development Programme as the Implementing Agency for the Global Environmental Facility – Enabling Activities. Leading this important project is the Division of Environment and Conservation of the Ministry of Commerce, Industries and Environment with the continuous and strong support of the NBSAP Steering Committee and the National Environmental Coordinating Committee.



Photo Buada Lagoon Forest

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NONI FRUIT AN IMPORTANT TRADITONAL MEDICINAL PLANT



TRADITIONAL USE, TODDY FROM COCONUT TREE FOR DRINKING AND MEDICINE



LIST OF ACRONYMS

CIE	–	Commerce Industry Environment
NRC	–	Nauru Rehabilitation Corporation
RONPHOS	–	Republic of Nauru Phosphate
AMU	–	Aid Management Unit
DPPD	–	Development Planning and Policy Division
GEF	–	Global Environment Facility
UNDP	–	United Nations Development Programme
SPREP	–	Secretariat of Pacific Regional Environmental Programme
SPC	–	Secretariat of the Pacific Community
SOPAC	–	South Pacific Applied Science
USP	–	University of the South Pacific
NFMRA	-	Nauru Fisheries Marine Resources Authority
NBSAP	–	National Biodiversity Strategic Action Plan
NSDS	–	National Sustainable Development Strategy
NEMS	–	National Environmental Management Strategies
NIANGO	-	Nauru Island Association of Non-Governmental Organisations
CBD	-	Convention of Biological Diversity
NCC	-	Nauru Community Councils

1. INTRODUCTION

The definition of Biodiversity for the purpose of the Nauru Biodiversity Strategy and Action Plan is:

The variety of life forms, the different plants, animals and micro-organisms, the genes they contain, and the ecosystems they form. It is usually considered at three levels; genetic diversity, species diversity, and ecosystem diversity.

It thus includes all the species that make up the natural world of Nauru, those which naturally occur on the island, and those brought here by people. Nauru's isolation as a single island from other land masses means that many of the species found here are endemic and their conservation is of particular importance. For the past century however, Nauru has been heavily mined for phosphate and has led to the serious breakdown of its physical environment as well as of the socio-economic wellbeing of its people.

This strategy, in complementing the activities of the Nauru Rehabilitation Program, aims to conserve and sustainably use these endemic species and equally to secure the future of other species, native or introduced, that are vital to agriculture, forestry and fisheries. The conservation of biodiversity is vital to the ongoing social, economic and cultural development of the nation.

1.1 OVERVIEW OF THE NAURU BIODIVERSITY STRATEGY AND ACTION PLAN

The Nauru Biodiversity Strategy and Action Plan comprises of seven chapters:

Chapter 1: An introduction to how and why the Plan has been prepared, especially in respect of the Convention on Biodiversity and related Nauru plans or proposals;

Chapter 2: Introduces Nauru's vision, guiding principles and goals on biodiversity conservation;

Chapter 3: A strategic framework for biodiversity management with Thematic Areas and accompanying Goals, Objectives, and Actions including:

Thematic Areas for Action

Theme 1: Mainstreaming Biodiversity;

Theme 2: Ecosystem Management

Theme 3: Species Management

Theme 4: Community

Theme 5: Access & Benefit Sharing from Use of Genetic Resources

Theme 6: Biosecurity

Theme 7: Agrobiodiversity

Theme 8: Financial Resources & Mechanisms

Chapter 4: Implementation and Monitoring providing management and monitoring structures for implementing the Strategy;

Chapter 5: Appendices providing the national data on biodiversity;

Following the main text is a Glossary, list of Names of Species Referred to in Text (in Nauruan) and a list of References.

Map of Nauru



1.2 OBLIGATION OF THE CONVENTION ON BIODIVERSITY

Nauru ratified the Convention on Biological Diversity in November 1992, and is therefore a Contracting Party to the Convention.

Box 1.1

AN OVERVIEW OF THE CONVENTION ON BIOLOGICAL DIVERSITY

Objectives:

The conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding (*Article 1*)

Obligations:

The Convention obliges governments to take a number of measures, these include:

- Monitoring and identification of biodiversity;
- Environmental Impact Assessment;
- National Strategies, plans or programmes to conserve and use the components of biological diversity sustainably; and
- The integration of biodiversity policy into relevant sectoral, or cross sectoral plans, programmes and policy.

A Process:

The Convention is not a static treaty, but rather a process by which its Contracting Parties agree to take certain actions at the national level.

Some Features of the Convention:

- Recognition of national sovereignty over biodiversity and biological resources;
- Recognition that biodiversity is essential to our planetary life-support systems and that it makes an important contribution to a nation's economy;
- Requires developed countries to assist developing in biodiversity conservation;
- Recognition of the role of indigenous and local communities in protecting biodiversity;
- Promotes the fair and equitable sharing of the benefits arising from the use of genetic resources.

The Convention constitutes an historic commitment by nations of the world to address the detrimental impacts of human activity on biodiversity. A cornerstone of biodiversity conservation is inter-generational equity, the assurance that future generations gain equal access to essential biological resources

The Convention places clear obligations on Contracting Parties. Specifically, *Article 6. General Measures for Conservation and Sustainable Use* requires for each Contracting Party, 'in accordance with its particular conditions and capabilities, to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity. The Nauru Biodiversity Strategy and Action

Plan (NBSAP) is Nauru's initial response to this obligation. This strategy contains elements which also address in part the following further articles in the CBD:

- Article 7: Identification and Monitoring
- Article 8: In situ Conservation
- Article 9: Ex-situ Conservation
- Article 10: Sustainable Use of Components of Biological Diversity
- Article 11: Incentive Measures
- Article 12: Research and Training
- Article 13: Public Education and Awareness
- Article 14: Impact Assessment and Minimising Adverse Impacts
- Article 15: Access to Genetic Resources
- Article 16: Access to Transfer of Technology
- Article 17: Exchange of Information
- Article 18: Technical and Scientific Cooperation
- Article 19: Handling of Biotechnology and Distribution of its Benefits
- Article 20: Financial Resources
- Article 21: Financial Mechanisms
- Article 22: International Relationships

1.3 PREPARATION OF THE NAURU BIODIVERSITY STRATEGY AND ACTION PLAN

1.3.1 ADMINISTRATIVE FRAMEWORK

The Nauru Biodiversity Strategy and Action Plan (NBSAP) is a nationally executed Project funded by the United Nations Development Programme. The NBSAP was formulated during a two year period (February 2008 – July 2010) which comprised an extensive process of research and consultative activities involving a broad range of stakeholders at all levels.

The responsibility for preparation of the NBSAP was delegated to the Environment Unit of the Ministry of Commerce, Industry and Environment. The Environment Unit responded to this appointment by drawing up, in conjunction with UNDP, the Terms of Reference for the study and then inviting a broad spectrum of government and NGO agencies to sit on the Steering Committee which had overall responsibility for the preparation of the plan. The invited membership of the Steering Committee is indicated in Box 1.2.

This report constitutes the Final NBSAP Report which is produced for consideration by the Cabinet of the Nauru Government. It was endorsed by Cabinet in 2010.

In responding to the Terms of Reference for the study, the Steering Committee endorsed the need for maximum consultation and capacity raising as well.

Box 1.2**MEMBERSHIP OF THE STEERING COMMITTEE OF THE
NAURU BIODIVERSITY STRATEGY AND ACTION PLAN****Government Departments/Entities**

1. Department of CIE (Environment Unit)
2. Division of Agriculture (CIE)
3. Department of Nauru Fisheries Marine Resources Authority
4. Department of Justice
5. Department of Finance (AID Management Unit, DPPD)
6. Office of the Chief Secretary
7. Nauru Rehabilitation Corporation (NRC)
8. RON Phosphate (Ronphos)
9. Department of Health
10. Department of Culture and Women Affairs
11. Department of Foreign Affairs

Statutory Bodies

12. NBSAP Steering Committee

Non Government Organisations

13. NIANGO
14. Nauru Community Leaders
15. Nauru Church Leaders

Others

16. United Nations Development Programme
17. NBSAP Consultant

1.3.1.1 CONSULTATION

Wide consultation has been an important feature of the preparation of the NBSAP. In addition to the active role played by the Steering Committee, the following were undertaken:

1. An initial two day national BSAP consultation workshop to identify and prioritise national environmental issues.
2. A five day national BSAP Action Development Workshop

3. A two day National Workshop to consider a Working Draft of the NBSAP
4. A one day meeting of the Steering Committee to discuss the results of the National Workshop on the Working Draft of the NBSAP
5. A national workshop to consider the Draft Nauru BSAP

1.3.1.2 CAPACITY RAISING

The following achievements have occurred during the formulation of the Strategy:

- Increased awareness and understanding of biodiversity issues by members of the Steering Committee.
- Division of Environment staff increased their knowledge of biodiversity and associated issues in compiling technical reports.
- Division of Environment staff increased their experience at facilitating workshops with a wide range of different groups.
- Community groups and NGOs increased their awareness and understanding of biodiversity issues.
- Community groups and NGOs increased their experience of interactions with government officials at national workshops.

1.3.1.3 FINALISATION OF THE REPORT

Finalising the report to ensure that all Government Ministries and Departments, NGOs and community leaders were given the opportunity to comment on the Nauru BSAP and to ensure that their comments were incorporated in a fair and transparent manner was considered very important to the Steering Committee. To ensure this an independent facilitator was hired and given the responsibility for this process.

2 VISION, GUIDING PRINCIPLES AND GOALS

A. VISION

Nauru's biological and genetic resources are protected, conserved and sustainably managed to emphasise the desired outcome of a future where individual, community, business and government partnerships contribute to a sustainable quality of life for all Nauruans.

B. GUIDING PRINCIPLES

1. Nauru's Sovereign Right

Nauru has sovereign rights over her biological diversity and resources.

2. Good Governance and Leadership

The Government of Nauru takes the leading role to ensure the protection, conservation and sustainable management of our biodiversity, through effective governance and leadership and in full consultation with all stakeholders.

3. Collective Responsibility

All residents and visitors have an individual and collective responsibility to protect, conserve and sustainably utilise our biodiversity and its resources, for the benefit of present and future generations.

4. Stakeholder Participation

The full participation and collaboration of all stakeholders is required for the effective coordination and implementation of the Nauru BSAP to ensure accountability and transparency.

5. Traditional Knowledge, Practices and Innovations

Nauruan traditional knowledge, innovations and sustainable practices which are important for the protection and conservation of biodiversity, should be fully revitalised, recognised, preserved and maintained.

6. In situ and Ex situ Conservation

Biodiversity is best conserved in those places where it naturally occurs (in situ), however ex-situ conservation may be needed to assist in the conservation management of threatened species or forms.

In situ Conservation - conservation of ecosystems and natural habitats, the maintenance and recovery of viable populations of species in their natural surroundings.

Ex situ Conservation - conservation of components of biological diversity outside their natural habitats.

7. Public Awareness and Capacity Building

Public awareness, education and the strengthening of local capacity are essential for the protection, conservation and sustainable use of biodiversity.

8. Respect for Biodiversity

There should be respect for the intrinsic value of biodiversity resources consistent with the concept of *angam*¹

C. GOALS

Goal 1 Policies and Legislation

Nauru will continue to develop, adopt and implement sound national policies, legislations and plans, and support regional and international conventions, to monitor, protect, conserve and sustainably manage its biodiversity.

Goal 2 Community Involvement

The greater involvement of the local community in the conservation and sustainable management of Nauru's biodiversity will be encouraged and promoted.

Goal 3 Co-operation and Coordination

All stakeholders including the private sector shall cooperate in an integrated and cross sectoral manner for the protection, conservation and sustainable management of biodiversity. Nauru shall cooperate and coordinate with regional and international agencies on biodiversity matters.

Goal 4 Public Awareness

Public awareness and understanding of the importance of respecting and sustainably managing our biodiversity will be enhanced through educational programmes at all levels.

Goal 5 Capacity Building

Human and institutional capacity at all levels of government, private sector, NGOs and communities will be improved and strengthened, to better achieve Nauru's responsibilities to the environment and to ensure NBSAP objectives are fully achieved.

Goal 6 Protection of Genetic Resources

Nauru's genetic resources will be protected from unsustainable exploitation, while benefits from their use are shared equitably to promote conservation and sustainable use of biodiversity.

¹ *angam* – The concept of *angam* refers to the strong emotional tie between Nauruans and their island environment.

Goal 7 Prevention, Control and Eradication

Prevent, control and eradicate harmful native and alien species, which impede the restoration of endangered species and the sustainability of Nauru's biodiversity.

Goal 8 Social and Economic Development

Social and economic development through the national rehabilitation programme and the utilization of biodiversity resources shall be guided by precautionary principles and sustainable measures.

Goal 9 Education

Education curricula at all levels will include integrated conservation and sustainable use of biological and genetic resources.

PHOTO EAST COAST ESCARPMENT ANABAR POND USED TO BE USED FOR MILKFISH FARMING



3. STRATEGY & ACTION PLAN

Key Players

3.1 THEME 1 MAINSTREAMING BIODIVERSITY

STRATEGY GOAL:

The rehabilitation, conservation and sustainable use of biodiversity, which is vital to the development of Nauru, is integrated into national, sectoral and cross-sectoral plans, policies and programmes

Biodiversity work in Nauru has been implemented recently by a sectoral approach mainly in the domain of the National Rehabilitation Programme but also through Environment, Forestry and Fisheries. This sectoral approach has caused the continued rapid degrading and depletion of biological resources, as other sectors of Government and the private sector undertook developments that did not consider their adverse impacts on biodiversity. The extensive loss of biodiversity and its adverse impact on the future of Nauru's social and economic development will continue all sectors do not work together for better solutions.

The development of Nauru Biodiversity Strategy and Action Plan reemphasises the importance of an integrated approach to promoting the conservation and sustainable use of biodiversity. It calls for the strengthening of collaboration between all sectors of government along with private sector, non-governmental organizations and civil society for the effective implementation and monitoring of this plan. Conscious efforts must be taken by all stakeholders to ensure that the impacts of their individual work on biodiversity is kept to a minimum or eliminated while promoting efforts to document, conserve and sustainably use Nauru's biodiversity.

OBJECTIVE 1: Policy

To integrate concepts of conservation and sustainable use of biodiversity into all sectoral policies, plans and programmes.

Monitoring Goal: Conservation and sustainable use concepts have been integrated and used in all government ministries operational plans.

ACTIONS:

- 1.1 To include issues identified in the NBSAP in the next National Sustainable Development Strategy (NSDS) and issues such as financing biodiversity and ensuring biodiversity considerations are effectively incorporated in the Government's development policies
- 1.2 Provide Policy Advice regarding amendments to existing policies and development of new policies to fully support the NBSAP

**Nauru
Rehabilitation
Corporation, RON
Phosphate,
Environment Unit
CIE, Agriculture
Division, Aid
Management Unit,
DPPD**

Key Players

THEME 1 – MAINSTREAMING BIODIVERSITY

OBJECTIVE 2: Multi-sectoral Collaboration

To improve and strengthen multi-sectoral collaboration in promoting conservation and sustainable use of biodiversity in Nauru.

Monitoring Goal: *Multi-sectoral team including government agencies , statutory bodies, NGOs, communities and private sector has been set up and activities developed to promote collaboration on all biodiversity related activities.*

ACTIONS:

- 2.1 *Enhance and strengthen the links between the Biodiversity Policy Committee, who will oversee the implementation of the NBSAP, and other Government Departments, NGOs, Private Sector and Community Groups to advise on the sustainable management of Nauru’s biological and genetic resources, and contribute to Nauru’s participation at international and regional environmental consultations.*
- 2.2 *Establish a multi-sectoral team of scientists and experts to conduct biological studies and undertake monitoring programmes on biodiversity.*
- 2.3 *Establish and maintain regular consultations and communication links between all stakeholders on international and regional treaties for the conservation and sustainable use of biodiversity*

OBJECTIVE 3: Legislation

To ensure that appropriate legislation is developed and effectively enforced to sustainably manage Nauru’s Biodiversity

ACTIONS:

- 3.1 *Review and Enact the Environment Legislation to incorporate relevant actions from the NBSAP*
- 3.2 *Develop, adopt and enforce EIA legislation to minimize the adverse impacts of developments on the environment*
- 3.3 *Ensure the integration of the objectives and actions of NBSAP into legislative amendments being undertaken by relevant departments, to ensure consistency across all sectors concerned*
- 3.4 *Integrate the protection of species from the impact of oil spill and marine pollution into the appropriate legislation*

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD

Department of Justice, SPREP Legal Environment Advisor, CIE, AMU, DPPD

<p style="text-align: center;">THEME 1 - MAINSTREAMING BIODIVERSITY</p>	<p style="text-align: center;">Key Players</p>
<p>3.5 Review the conservation status of wildlife and make appropriate monitoring and enforcement amendments</p> <p>3.6 Develop appropriate legislation on biosecurity to include risk management on genetically modified organisms, invasive alien species, and effective border control</p> <p>3.7 Develop appropriate legislation for the promotion and protection of traditional knowledge and equitable benefit sharing, which are important for the conservation and sustainable use of biodiversity</p> <p>3.8 To develop in a comprehensive way a coherent philosophy and programme of action designed to protect and enhance our natural cultural heritage</p>	<p>Department of Justice, SPREP, SPC, AMU, DPPD, CIE, CBD</p>
<p>OBJECTIVE 4: Environmental Impact Assessment</p> <p>To ensure that EIAs are conducted for all development projects to minimise any adverse impacts on Nauru’s Biodiversity</p> <p>ACTIONS:</p> <p>4.1 <i>Develop relevant EIA system for Nauru in 2010</i></p> <p>4.2 <i>Undertake biological surveys and assessments as an integral part of EIA procedures</i></p> <p>4.3 <i>Integrate the assessment of development impacts on biodiversity as part of the code of practice for any extraction of natural resources</i></p> <p>4.4 <i>Integrate economic valuation into EIA as an integral part</i></p>	
<p>OBJECTIVE 5: Capacity Building</p> <p>To develop and enhance local capacity to ensure the effective implementation and enforcement of policies and legislation for the conservation and sustainable use of Nauru’s Biodiversity</p> <p>ACTIONS:</p> <p>5.1 <i>Develop a national clearinghouse mechanism based on the CBD-CHM for disseminating and sharing of information on biodiversity work</i></p> <p>5.2 <i>Conduct National Seminars involving all key stakeholders on policies and plans relating to conservation and sustainable management of biodiversity</i></p> <p>5.3 <i>Develop public awareness material on all legislation relating to biodiversity use for dissemination to the people of Nauru</i></p>	<p>Department of Education, AMU, DPPD, SPREP, SOPAC, SPC, CIE, USP.</p>

THEME 1 - MAINSTREAMING BIODIVERSITY

- 5.4 *Implement and coordinate media programmes to raise awareness*
- 5.5 *Promote and encourage access to and the use of advocacy material on biodiversity available at the various government departments*
- 5.6 *Provide capacity building training for local communities on the principles and benefits of EIA, so they can demand the conduct of EIA on developments at the local level*

Key Players

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD

3.2 THEME 2: ECOSYSTEMS MANAGEMENT

Strategy Goal:

To commit to an annual increase of 2% to enhance, develop and manage current conservation and rehabilitation of biological diversity and ecosystems to increase the percentage of Nauru’s protected and conserved areas from the existing 2% of total land, including coastal areas, to 30% by 2025.

The biodiversity of Nauru is extremely important in the context of resource management efforts to rehabilitate the largely mined-out island nation. The indigenous flora and the vegetation of Nauru are among the most limited on earth, even before the mining starts. Of the known 60 species of flora and vegetation, most have now perished while the rest exist but in isolated numbers. Faunal life and bird species have been affected by the degraded habitat which affects also the marine life.

Ecosystems Management will enable sustainable use of biodiversity, control the spread of alien introduced species, and increase native biodiversity which will boost the natural basis of the country’s developments.

OBJECTIVE 1: Research & Monitoring

To promote and encourage research for the identification, documentation and monitoring of Nauru’s ecosystems for the implementation of appropriate management programmes

ACTIONS:

- 1.1 Undertake biological surveys of Nauru’s terrestrial ecosystems
- 1.2 Undertake a complete survey of Nauru’s inshore and offshore biodiversity
- 1.3 Develop and implement a long term monitoring program for Nauru’s native ecosystems including invasive species
- 1.4 Develop a list of priority research topics and monitoring techniques to be used by students and staff of natural resource sectors
- 1.5 Develop a programme for the identification of genetic resources from Nauru’s biological resources
- 1.6 Develop and implement a programme for monitoring the impacts on biodiversity from climate change

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD

THEME 2 - ECOSYSTEMS MANAGEMENT

OBJECTIVE 2: Conservation Areas

To promote, develop and properly manage conservation areas to achieve a full representation of Nauru's ecosystem

ACTIONS:

- 2.1 *Establish conservation areas in under represented ecosystems*
- 2.2 *Prioritise restoration programmes of degraded ecosystems by heavy industrial and other natural causes*
- 2.3 *Establish large conservation areas which include more than one ecosystem in high priority sites as identified in the NBSAP process*
- 2.4 *Encourage the development of a representative system of marine protected areas built upon existing plans*
- 2.5 *Develop appropriate information systems such as GIS to store and share information of ecosystems and protected areas*
- 2.6 *Develop a national water conservation programme to support all the priority areas and the community-based water catchment areas*
- 2.7 *Develop and implement restoration programmes of degraded ecosystems*

OBJECTIVE 3: Sustainable Use of Ecosystems

To develop and effectively manage programmes that promote the sustainable use of Nauru's ecosystem

ACTIONS:

- 3.1 *Develop guidelines for the sustainable use of biodiversity resources and other natural products based on the national environmental legislation upon enactment*
- 3.2 *Identify sustainable management and community effort options for cultivation*
- 3.3 *Identify options to allow all marine biodiversity, including inland lagoons, to be managed sustainably under the guidance of the NFMRA Act and other relevant policies, guidelines and strategies*
- 3.4 *To identify and restore the traditional ownership, usage of their marine and terrestrial resources*
- 3.5 *Develop and promote integrated coastal management programmes*

Key Players

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD

THEME 2 - ECOSYSTEMS MANAGEMENT

OBJECTIVE 4: Capacity Building

To develop and enhance local capacity to ensure the sustainable management of Nauru's ecosystems

ACTIONS:

- 4.1 *Develop and implement local capacity building programmes on biological surveys, monitoring techniques and ecosystem management*
- 4.2 *Establish a multi-sectoral group of national experts to coordinate and undertake biological surveys and monitoring programmes*
- 4.3 *Provide and implement appropriate training for communities on sustainable income generating activities*
- 4.4 *Establish a Conservation Management committee of key agencies to assess and review appropriate approaches for improving the management of conservation areas*

OBJECTIVE 5: Public Awareness & Education

To increase public awareness & understanding on the importance of Nauru's ecosystems to ensure their sustainable management

ACTIONS:

- 5.1 *Establish an Environmental Information Centre*
- 5.2 *Coordinate a programme between relevant Departments to utilize information on Nauru's biodiversity for use and integration into school curricula, youth and community development programmes*
- 5.3 *Develop and implement public awareness and educational programmes on the importance and management of ecosystems*
- 5.4 *Disseminate information on the importance of Nauru's ecosystem through local media*
- 5.5 *Develop a core set of public awareness material and displays on conservation for public display, promotional campaigns, and distribution to local communities*

Key Players

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Department of Education, DPPD

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD, Department of Media, SPREP, SPC

Key Players

3.3 **THEME 3: SPECIES MANAGEMENT**

Strategy Goal:

To promote the conservation of Nauru’s native and other important species and provide mechanisms for their sustainable use

Nauru is a small raised coral-limestone island with limited land and marine habitat, and therefore its species biodiversity is somewhat limited. Nauru’s species diversity includes 90 species of native vascular plants and 500 introduced species, land animals of 25 indigenous bird species, some insects and land crabs. The main categories of marine resources include 105 finfish species and limited range of turtles, crustaceans, octopus, shellfish, holothurians (bêche-de-mer), and other invertebrates.

Species threatened with extinction in plants, birds and other land and marine species. The key threats have been identified in some cases and management to alleviate these will be carried out. Such actions are identified here. However, for most groups of species, representative samples of each ecosystem must be carefully managed.

There is a lack of information on the status of some species of Nauru. Traditionally useful or well know species are decreasing rapidly in numbers and these include various fruit trees, ornamental and medicinal plants as identified previous reports.

Conservation of our biodiversity will ensure the regeneration of plants and some marine species with the potential to provide cures for diseases and be useful for other pharmaceutical purposes. Species also provide important biodiversity maintenance functions of their own such as the pollination of flowers and dispersal of seeds by birds.

OBJECTIVE 1: Conservation of Species

To enhance the status of native and other important species in Nauru through effective conservation programmes

ACTIONS:

- 1.1 *Establish and maintain a complete threatened species list for Nauru and provide regular updates to appropriate regional and international directories*
- 1.2 *Review the list of threatened species to determine those appropriate for recovery programmes (including propagation) and develop and implement these programmes*

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD, SPREP, SOPAC, SPC

THEME 3 - SPECIES MANAGEMENT

Key Players

- 1.3 *Fully develop a Botanical Garden to house collections of Nauru's native plants and seeds, including medicinal plants, and other species*
- 1.4 *Explore the feasibility of establishing captive breeding spawning programmes as a security from the impacts of pollution, natural disasters and alien invasive species introduction*
- 1.5 *Improve and extend aquaculture farming at the inshore lagoons and man-made ponds*

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD, SPREP, SOPAC, SPC

OBJECTIVE 2: Research & Monitoring

To promote and encourage research for the identification, documentation and monitoring of species and the implementation of appropriate conservation and management programmes

ACTIONS:

- 2.1 *Undertake research programmes and update documents on Nauru's fauna and flora*
- 2.2 *Undertake a survey to determine the status of Nauru's seabird population*
- 2.3 *Develop a monitoring programme to monitor the adverse impact of coral bleaching in Nauru*
- 2.4 *Develop a monitoring programme to monitor the effects of invasive species in Nauru*

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD, SPREP, SPC, SOPAC

OBJECTIVE 3: Sustainable Use & Management of Species

To ensure the sustainable use & management of species for social and economic development

ACTIONS:

- 3.1 *Support the indigenous forest regeneration and rehabilitation programmes at Topside and its extension to coastal areas*
- 3.2 *Develop and encourage sustainable aquaculture freshwater and marine culture*
- 3.3 *Develop nurseries and botanical plots by local communities for growing medicinal plants*

THEME 3 - SPECIES MANAGEMENT

Key Players

OBJECTIVE 4: Public Awareness & Education

To enhance knowledge and understanding of the public on the conservation, sustainable use and management of species

ACTIONS:

- 4.1 *Develop public awareness campaigns and activities to increase the appreciation of the functions and benefits of biodiversity to Nauruans utilizing the previous campaign approaches*
- 4.2 *Develop public awareness programmes for all stakeholder groups on the sustainable use of native and other important species*
- 4.3 *Integrate information on the sustainable use and management of native and other important species into the school curriculum at all levels*

Nauru Rehabilitation Corporation, RON Phosphate, Environment Unit CIE, Agriculture Division, Aid Management Unit, DPPD, SPREP, SOPAC, SPC

OBJECTIVE 5: Capacity Building

To enhance and strengthen the capacity of all Nauruans to ensure the sustainable use, management and conservation of native and other species

ACTIONS:

- 5.1 *Develop and implement local capacity building programmes on biological surveys, monitoring techniques and species management*
- 5.2 *Establish a multi-sectoral group of national experts to coordinate and undertake species conservation, biological surveys and monitoring programmes*
- 5.3 *Provide and implement national local training on community-based species conservation management approaches*
- 5.4 *Assess and review appropriate and effective approaches for the conservation and management of species*

Department of Education, AMU, DPPD, SPREP, SOPAC, SPC, CIE

3.4 THEME 4: COMMUNITY

Strategy Goal:

Empowering and encouraging the twelve district communities to protect, conserve and sustainably use and manage our biodiversity

Nauru’s natural biodiversity heritage nurtured and preserved by our ancestors was almost completely destroyed during the ‘colonial era’ days. The significant loss of biodiversity further leads to the erosion of the cultural heritage based on its use and preservation.

To ensure that the needs of present generations are met while not destroying the livelihood for our children, concerted efforts must be made by everyone to ensure those making the decisions on the rehabilitation, conservation or the utilization of our natural biodiversity heritage are able to do so with all the necessary information available to them.

Land tenure is the most critical consideration in terms of the practicality of implementing biodiversity conservation and sustainable use. Approximately, ninety percent of community land is tied up with Government and its mining company. Rehabilitation of ‘topside’ has begun but must also include the option for landowners to reclaim their rehabilitated lands to begin their own conservation and sustainable use and management of biodiversity.

District communities, as owners of the land should be empowered to promote the conservation and sustainable use of biodiversity at the community level. In this context, training activities in decision making, resource management and conflict resolution would appear appropriate. Furthermore, empowered communities to promote conservation and sustainable use of biodiversity at the district level, are more likely to provide acknowledgement and support to national programmes and traditional authorities to enforce and monitor national laws and regulations, while providing necessary incentives to improve the standard of living.

OBJECTIVE 1: Traditional Knowledge , Practices & Innovation

Preserve and enhance traditional knowledge and practices of Nauru that are important for the protection, conservation and sustainable use of biodiversity

ACTIONS:

- 1.1 *Conduct research and develop a national register to document, enhance and preserve traditional knowledge, practices and innovation important for the conservation of biodiversity*

Department of Education, AMU, DPPD, SPREP, SOPAC, SPC, CIE, NIANGO, Community Leaders.

THEME 4 - COMMUNITY

Key Players

- 1.2 *Develop legislation to preserve and protect traditional Nauruan knowledge, practices and innovation, and to provide benefit sharing mechanisms for appropriate knowledge holders*
- 1.3 *Develop appropriate institutional mechanisms that promotes the decentralization of monitoring and enforcement of Environmental regulations to local communities*
- 1.4 *Integrate modern science and technology with traditional knowledge, practices and innovation to promote the conservation and sustainable use of biodiversity*

AMU, DPPD, SPREP, SOPAC, SPC, CIE, NIANGO, Community Leaders, CIE, Department of Culture and Women's affairs

OBJECTIVE 2: Empowering Communities

Empowering communities to conserve and sustainably manage biodiversity under customary resource tenure

ACTIONS:

- 2.1 *Develop and implement community programmes for the conservation and sustainable use of biodiversity*
- 2.2 *Develop and integrate activities that promote the conservation and sustainable use of biodiversity into relevant national agencies' outreach/community programmes*
- 2.3 *Develop and encourage the full participation of all different target groups in communities in the coordination and implementation of conservation and sustainable use programmes*
- 2.4 *Establish an award incentive scheme for environmentally friendly communities that promote conservation and sustainable use of biodiversity*

AMU, DPPD, SPREP, SOPAC, SPC, CIE, NIANGO, Community Leaders, CIE, Department of Culture and Women's affairs

OBJECTIVE 3: Public Awareness & Education

To promote, encourage and strengthen awareness and understanding of local communities on the importance of protecting, conserving and ensuring the sustainability of any use of biodiversity, through appropriate awareness campaigns and educational programmes

ACTIONS:

- 3.1 *Develop and implement public awareness programmes for community leaders and relevant target groups on the functions and benefits of*

AMU, DPPD, SPREP, SOPAC, SPC, CIE, NIANGO, Community Leaders, CIE, Department of Culture and Women's affairs, Department of Education, Department of Media.

THEME 4 - COMMUNITY

conserving and the sustainable use of biodiversity

- 3.2 *Promote and conduct public awareness campaigns and programmes through media, workshops, seminars and information materials for communities to enable them to make appropriate decisions on the use of their natural heritage*
- 3.3 *Integrate information on traditional knowledge that is important for conservation and sustainable use of biodiversity into the education curriculum*

Key Players

AMU, DPPD, SPREP, SOPAC, SPC, CIE, NIANGO, Community Leaders, CIE, Department of Culture and Women's affairs, Department of Education, Department of Media.

OBJECTIVE 4: Capacity Building

To build the capacity of communities in the coordination and implementation of conservation and appropriate conservation programmes

ACTIONS:

- 4.1 *Provide capacity building training for communities in undertaking community-based biological studies and monitoring programmes*
- 4.2 *Provide training for communities on their legal rights and appropriate procedures for reporting environmental offences*
- 4.3 *Provide training programmes for communities on the development and management of conservation programmes*

AMU, DPPD, SPREP, SOPAC, SPC, CIE

3.5 *THEME 5: ACCESS & BENEFIT*
SHARING FROM USE OF GENETIC
RESOURCES

Strategy Goal:

Nauru’s genetic resources are accessible for utilisation and benefits are equitably shared amongst the stakeholders

One of the main objectives of the Convention on Biological Diversity is to ensure the equitable sharing of benefits from the use of genetic resources. Nauru does not have records of its genetic resources that have pharmaceutical benefits and would need to set up its traditional knowledge and genetic resources database.

Nauru needs to put in place legal frameworks and infrastructure to properly manage its genetic resources for future scientific research but at the same time, ensuring that benefits from such ventures, through appropriate benefit sharing mechanisms, acknowledge the ownership and traditional knowledge associated with them.

OBJECTIVE 1: Access to and Equitable Sharing of Benefits of Genetic Resources

To establish appropriate national measures to effectively access genetic resources and carry out fair and equitable sharing of benefits from the use of these resources

ACTIONS:

- 1.1 *Conduct research and establish an Environment (Bioprospecting) Regulation*
- 1.2 *Develop procedures to ensure that the Environment (Bioprospecting) Regulations are effectively enforced and monitored*
- 1.3 *Review the need for a National Bioprospecting Coordinating Body*
- 1.4 *Develop benefit sharing mechanisms for holders of knowledge and owners of resources utilized in bioprospecting*
- 1.5 *Develop mechanisms for access to traditional knowledge and genetic resources*
- 1.6 *Explore opportunities to restore Nauru’s endemic biodiversity, held in collections outside of Nauru. Identify outside ex-situ collections holding Nauru’s biological and genetic resources, and develop agreements for the restoration and repatriation of ownership rights.*

DPPD, SPREP, SOPAC, SPC, CIE.

DPPD, SPREP, SOPAC, SPC, CIE.

***THEME 5 – ACCESS & BENEFIT
SHARING FROM USE OF GENETIC
RE-SOURCES***

OBJECTIVE 2: Public Awareness & Education

To raise awareness and understanding of all Nauruans on Access and Benefit Sharing from the Use of Genetic Resources

ACTIONS:

- 2.1 Develop and implement public awareness campaigns on Environment (Bioprospecting) Regulations*
- 2.2 Conduct national seminars involving all key stakeholders on Access and Benefit Sharing programmes on the use of genetic resources*
- 2.3 Coordinate and implement Media programs to raise awareness*

Key Players

DPPD, SPREP, SOPAC, SPC, CIE.

3.6 THEME 6: BIOSECURITY

Strategy Goal:

To protect Nauru’s native biodiversity from impacts of alien invasive species and imported earth materials, through effective border control, effective quarantine and eradication programmes

One of the biggest threats to the long term survival of native biodiversity in Nauru is the spread of both intentional and non-intentional introductions of alien species. Another potential threat may come from the proposed importation of soil and earth materials for the rehabilitation work.

Recent observations at Anibare and Buada have indicated that indigenous species may be experiencing increasing competition from introduced species, thus interfering with their regeneration. Given the low number of indigenous species compared with introduced species, their immense cultural, economic and ecological importance, and the proven aggressive and highly competitive nature of some exotic species, there is a priority need for the protection and nurturing of native plants to ensure their future in Nauru.

Additionally, the possible impacts of genetically modified organisms on the native biodiversity can be drastic.

Rigorous training programmes along with appropriate well equipped facilities need to be put in place to prevent the potential impacts on native biodiversity from alien species.

OBJECTIVE 1: Policy & Legislation

To develop appropriate policies and legislation to ensure the effective management of biosecurity

ACTIONS:

- 1.1 *Establish a coordinating committee on the protection of indigenous biodiversity from alien introduction*
- 1.2 *Develop policy and actions for the management of biosafety issues*
- 1.3 *Review and make appropriate amendments to the screening process for alien species and soil introductions to include assessment of impacts on native biodiversity*

DPPD, SPREP, SOPAC, SPC, CIE.

DPPD, SPREP, SOPAC, SPC, CIE, DPPD

THEME 6 - BIOSECURITY

Key Players

OBJECTIVE 2: Control & Eradication

To identify and develop appropriate programmes to ensure effective control and eradication of pest outbreaks

ACTIONS:

- 2.1 Develop and strengthen facilities and procedures for border control and quarantine services*
- 2.2 Develop programmes for the eradication and control of invasive species*
- 2.3 Develop and implement the PacPOL programme to protect native marine biodiversity from the discharge of ships' ballast*

DPPD, SPREP, SOPAC, SPC, CIE.

OBJECTIVE 3: Research & Monitoring

To carry out systematic and scientific research based on regular monitoring of the biosecurity management system

ACTIONS:

- 3.1 Review pest species present amongst Nauru's trading partners and develop response procedures to eradicate any that arrive*
- 3.2 Strengthen national research stations to be able to undertake appropriate scientific research and testing of introduced species*
- 3.3 Review and update the list of invasive species in Nauru*

DPPD, SPREP, SOPAC, SPC, CIE.

THEME 6 - BIOSECURITY

Key Players

OBJECTIVE 4: Capacity Building

To strengthen capacity of local staff through the implementation of relevant training programmes to ensure effective border control and quarantine services

ACTIONS:

- 4.1 *Provide training and capacity building for local staff on the screening of any new species introduction*
- 4.2 *Enhance capacity building training and provide appropriate resources for Quarantine Staff on border control and quarantine services*

DPPD, SPREP, SOPAC, SPC, CIE.

OBJECTIVE 5: Public Awareness & Education

To enhance knowledge and understanding of the public on the importance of protecting and conserving our biodiversity from the impacts of alien species

ACTIONS:

- 5.1 *Develop and implement a national public awareness programme for invasive species to prevent illegal introductions and encourage control*

DPPD, SPREP, SOPAC, SPC, CIE. Department of Media, Department of Education

3.7 THEME 7: AGROBIODIVERSITY

Strategy Goal:

To conserve and sustainably use agrobiodiversity to ensure its contribution to national development, the preservation of traditional knowledge and practices, and food and health security

Agrobiodiversity refers to the variety and variability of animal, plant and microbial organisms on earth that are important to food and agriculture. Traditional Nauru agricultural techniques were used over generations to develop new crops and maximise the use of the natural environment to cultivate relevant species for food production. Nauru agricultural techniques and species have now largely been replaced by hybrids and modern techniques which are sometimes inappropriate.

Most of Nauru lands are tied up with the mining industry and therefore agricultural developments are not priority for the Nauruan communities nor is it their primary source of income.

The rehabilitation of mined lands and their possible release for agricultural purposes would increase agricultural production and protection of native biodiversity through sustainable agricultural practices such as agroforestry.

Promoting sustainable agrobiodiversity practices in communities further ensures the long term protection of traditionally important agricultural practices and breeding methods.

OBJECTIVE 1: Conservation and Sustainable Use of Agrobiodiversity

To ensure the effective implementation of appropriate conservation measures for the sustainable use of agrobiodiversity

ACTIONS:

- 1.1 *Promote methodologies for sustainable use of Agrobiodiversity*
- 1.2 *Eliminate unsustainable Agrobiodiversity use*
- 1.3 *Establish incentives which encourage conservation and sustainable use of Agrobiodiversity, for example breadfruit project*
- 1.4 *Promote environmentally sound agricultural practices such as 'integrated farming systems', agroforestry and organic farming*
- 1.5 *Place greater emphasis on the importance and establishment of botanical gardens*

Agricultural Division
CIE, Environment Unit
CIE, SPREP, SPC, FAO,
SOPAC, DPPD, AMU,
NRC

THEME 7 - AGROBIODIVERSITY

- 1.6 *Expand in-situ and ex-situ conservation and sustainable activities, protected areas, aquaculture/mariculture*
- 1.7 *Develop new and enhance existing programmes for the preservation of indigenous (traditional use) species, varieties and breeds*

OBJECTIVE 2: Research & Development

To conduct relevant research critical to the development of Agrobiodiversity

ACTIONS:

- 2.1 *Develop programmes for the protection of native/useful species and varieties from the impact of alien and invasive species*
- 2.2 *Assess the impacts of new biotechnologies (genetic expressions, Living or Genetically Modified Organisms and Genetically Engineered Organisms) on Agrobiodiversity*
- 2.3 *Conduct inventories and promote surveys of existing agrobiodiversity resources*
- 2.4 *Develop and implement research and development training programmes for all relevant institutions involved in agrobiodiversity*

OBJECTIVE 3: Food and Health Security

To fully enhance and strengthen the critical importance of food and health security through the use of sustainable Agrobiodiversity practices

ACTIONS:

- 3.1 *Encourage sustainable agricultural breeding practices*
- 3.2 *Develop and implement agrobiodiversity programmes that not only increase food productivity but also restore and enhance agrobiodiversity*

Key Players

Agricultural Division
CIE, Environment Unit
CIE, SPREP, SPC, FAO,
SOPAC, DPPD, AMU,
NRC

Agricultural Division
CIE, Environment Unit
CIE, SPREP, SPC, FAO,
SOPAC, DPPD, AMU,
NRC

THEME 7 - AGROBIODIVERSITY

3.3 *Develop new and existing programmes that promote the production of nutritional food, for example breadfruit*

3.4 *Increase and improve inspection criteria on the quality and health aspects of both locally produced and imported food*

OBJECTIVE 4: Public Awareness & Education

To raise awareness and understanding of Agrobiodiversity through both formal and informal educational programmes

ACTIONS:

4.1 *Undertake national awareness programmes through all media, workshops, seminars utilizing the involvement and commitment of communities on the sustainable use of agrobiodiversity*

OBJECTIVE 5: Capacity Building

To strengthen human and institutional capacity to ensure the effectiveness of Agrobiodiversity programmes

ACTIONS:

5.1 *Undertake systematic training to enhance understanding and awareness of, and also to strengthen public involvement in and commitment to agrobiodiversity practices*

5.2 *Increase collaboration and coordination of the institutions directly involved in agrobiodiversity programmes*

5.3 *Integrate traditional and modern practices to further improve the agrobiodiversity of Nauru*

Agricultural Division,
CIE, Environment
Unit, SPREP, SPC,
DPPD, AMU, NRC

3.8 THEME 8: FINANCIAL RESOURCES & MECHANISMS

Strategy Goal:

To secure long term sustainability of all Conservation and Biodiversity related programmes by way of access to funding mechanisms from local and international sources

Implementing plans and programmes for the conservation and sustainable use of biodiversity as set out by Government, district communities and non-governmental organizations ultimately rely on the availability of the human resources capacity and financial resources. While efforts are being made to increase human resources capacity, implementation is hindered by limited financial resources.

To effectively implement conservation and sustainable use programmes, all available avenues need to be identified from which funds could be accessed, and plans need to be made so such funds are managed effectively.

This obligation under the Convention of Biological Diversity needs the commitment of all stakeholders at the local, national, regional and international levels. Government should recognise and further increase its commitment to conserving the vital biodiversity which is fundamental to the revitalisation of the social and economic development of the nation.

Mechanisms should be sought to secure financial assistance from international and bilateral donors to assist the local and national efforts in addressing all the increasing demands for biodiversity conservation and sustainable use.

OBJECTIVE 1: Financial Plans

To develop long term financial plans for undertaking Conservation Programmes

ACTIONS:

- 1.1 *Develop a long term financial plan for undertaking conservation programmes in Nauru*
- 1.2 *Establish a programme for increasing financial assistance for conservation work through Foundations and other aid donors*

Agricultural Division,
Environment Unit,
CIE, DPPD, AMU, NRC

THEME 8 – FINANCIAL RESOURCES & MECHANISMS

OBJECTIVE 2: Conservation Trust Fund

To establish a Conservation Trust Fund for the implementation of the Nauru NBSAP and relevant biodiversity work

ACTIONS:

- 2.1 *Identify funding sources for the establishment of a Conservation Trust Fund to provide long term financial sustainability for the implementation of NBSAP and relevant biodiversity work*
- 2.2 *Establish a Conservation Trust Fund and provide guidelines and set criteria for its use*
- 2.3 *Explore and establish community based conservation trust funds*

OBJECTIVE 3: Economic Valuation

To undertake an Economic Valuation of Nauru's Biodiversity

ACTIONS:

- 3.1 *Institute environmental economic valuation methodologies for assessing the full economic value of biodiversity*
- 3.2 *All user fees, taxes, fines and other revenues determined in the economic valuation should be deposited in the Conservation Trust Fund*
- 3.3 *Integrate biodiversity valuation as an integral part of land use and coastal use planning*

OBJECTIVE 4: Information Systems

To establish an Information System of all potential development partners

ACTIONS:

- 4.1 *Establish and regularly update a database of all potential development partners programmes*
- 4.2 *Develop a mechanism to determine different funding sources channeled to NGOs for implementation of biodiversity related programmes*
- 4.3 *Maintain and strengthen existing networks with donor agencies*

Agricultural Division
CIE, Environment Unit
CIE, SPREP, SPC, FAO,
SOPAC, DPPD, AMU,
NRC.

THEME 8 – FINANCIAL RESOURCES & MECHANISMS

OBJECTIVE 5: Income Generating Activities

To identify and promote sustainable Income Generating Activities for the community

ACTIONS:

- 5.1 *Identify and develop appropriate programmes to promote sustainable income generating activities at the community level*
- 5.2 *Establish a network with public and private sectors including donor agencies to support income generating activities*
- 5.3 *Conduct feasibility studies for newly proposed income generating activities*

OBJECTIVE 6: Partnership

To strengthen the partnership with the Private Sector, NGOs, Local Communities and Development Partners

ACTIONS:

- 6.1 *Develop and implement programmes to strengthen the partnership with the private sector, NGOs, local communities and development partners in planning and implementing Biodiversity related programmes*
- 6.2 *Establish a special award for an environmentally-friendly company to be integrated in the Exporter of the Year Award programme*
- 6.3 *Establish an award programme for environmentally-friendly community development*

Agricultural Division
CIE, Environment Unit
CIE, SPREP, SPC, FAO,
SOPAC, DPPD, AMU,
NRC.

THEME 8 – FINANCIAL RESOURCES & MECHANISMS

OBJECTIVE 7: Accounting System

To establish an Accounting System for recording revenues and expenditures for Biodiversity related activities

ACTIONS:

- 7.1 *Set up a network with relevant biodiversity agencies for recording revenue from and expenditure on biodiversity related activities*
- 7.2 *Produce regular progress reports (including financial statements) for each biodiversity project*

OBJECTIVE 8: Capacity Building

To strengthen the local capacity in the coordination and implementation of Biodiversity and Conservation projects

ACTIONS:

- 8.1 *Identify existing capacity development needs in addressing biodiversity and conservation related programmes*
- 8.1 *Secure financial assistance to develop and implement capacity development programmes*
- 8.1 *Develop capacity building programmes to improve financial management planning and implementation of biodiversity conservation projects*

OBJECTIVE 9: Public Awareness

To raise public awareness of existing and potential financial resources

ACTIONS:

- 9.1 *Publish and disseminate as widely as possible information on funding mechanisms*

Agricultural Division
CIE, Environment Unit
CIE, SPREP, SPC, FAO,
SOPAC, DPPD, AMU,
NRC.

4. IMPLEMENTATION AND MONITORING

4.1 MANAGEMENT STRUCTURE FOR IMPLEMENTATING THE STRATEGY

4.1.1 CURRENT SITUATION

The current administrative framework under the Ministry of Commerce, Industries and Environment identifies the Division of Environment and Conservation as the main implementing agency for biodiversity. An Environment Bill is in the process of drafting and it includes the formulation of an Environment Council which will oversee the interagency collaboration on the management of all environmental work in Nauru.

The National Environmental Management Strategy and Action Plan (NEMS) developed through a multi-sectoral team of government agencies, non- government organisations and statutory bodies established the framework of interagency committees to develop environmental policies such as biodiversity and advice on the management of such policies. The basis of the NBSAP Steering Committee was formed from the biodiversity Policy Committee identified in the NEMS.

4.1.2 NATIONAL ENVIRONMENTAL COORDINATING COMMITTEE (NECC)

Based on the NEMS, it is proposed that the National Environmental Coordinating Committee will oversee the implementation of the NBSAP. This NECC, is recommended to be chaired by the Permanent Secretary of the Ministry of Commerce, Industry and Environment, and consists of the following:

1) One senior representative from each of the following government agencies:

- Ministry of Commerce, Industry and Environment
- Ministry of Education
- Ministry of Health and Medical Services
- Ministry of Works and Community Services
- Ministry of Justice
- Nauru Phosphate Corporation
- Nauru Island Council

2) One representative from each of the following NGOs:

- Nauru Island Association of NGOs (NIANGO)
- Nauru Chamber of Commerce
- Nauru Environment Association
- Women's groups
- District representatives
- Nauru cultural/historical group

3) It is recommended that the Ministry of Commerce, Industry and Environment (MCIE) besides chairing the NECC also serve as the secretariat for the Committee. It is also proposed that a full-time NBSAP Coordinator is appointed (using funds to the NBSAP Project), to serve the NECC in implementing the NBSAP.

4.1.3 FUNCTIONS OF THE NATIONAL ENVIRONMENTAL COORDINATING COMMITTEE

The functions of NECC, assisted by the MCIE and in particular the NBSAP Coordinator, will be as indicated in Box 4.1:

Box 4.1

RECOMMENDED FUNCTIONS OF THE NATIONAL ENVIRONMENTAL COORDINATING COMMITTEE

1. To identify priority actions in the NBSAP that will be submitted for donor assistance
2. To identify actions that can be taken up locally
To identify lead agencies and ensure collaborations between agencies on the implementation of specific actions identified in the NBSAP
3. Monitor and recommend appropriate actions regarding the implementation of the NBSAP
4. Discuss and make appropriate recommendations on Nauru's national positions to regional and international biodiversity meetings
5. Facilitate the dissemination of biodiversity related materials to all stakeholders for appropriate actions
6. Coordinate and make sure multi-sectoral collaboration for all biodiversity work
7. Maintain and update a listing of biodiversity work being undertaken in Nauru
8. Assist members of expert groups in performing specific tasks
9. Develop a monitoring programme to assess the effectiveness of the NBSAP in managing Nauru's biodiversity

These responsibilities could be modified or additional responsibilities added when considered appropriate.

4.1.4 NATIONAL BIODIVERSITY POLICY

A National Biodiversity Policy has been drafted within the NEMS process and has been submitted to Cabinet. Its focus is largely on achieving the appropriate administrative structure and 'environment' for biodiversity conservation to proceed, with an emphasis on establishing and strengthening the Department of Environment and Conservation (DEC) as implementing agency. It identifies 12 priority actions in seven strategic areas as on Table 1.

Table 1: Strategic Areas & Actions in the Draft National Biodiversity Policy

STRATEGY	ACTIONS
Institutional Strengthening	<ol style="list-style-type: none"> 1. Establishing and Strengthening of DEC to implement the policy, particularly in all areas of NBSAP. 2. Hiring personnel with expertise in research on agrobiodiversity and marine resources.
Information	<ol style="list-style-type: none"> 3. Strengthen understanding of staff through the development of an Environmental Database. 4. Explore the recruitment of an Environment Information Technology Officer.
Processes	<ol style="list-style-type: none"> 5. Complete drafting the Environment Act 6. Draft Environmental Regulations to cover compliance and enforcement
Capacity Building	<ol style="list-style-type: none"> 7. Improvement of teaching aids for community outreach including audio/visual, internet, publications
Income Generation	<ol style="list-style-type: none"> 8. Build strong relations with SPREP, UNDP and other donors to increase funding access
Public Participation	<ol style="list-style-type: none"> 9. Consolidate existing community consultation partnerships, and educational programmes and materials 10. Implementation of the national action plan for the establishment of conservation areas and marine reserves 11. Empowering communities to conserve and sustainably use biodiversity
Public Awareness	<ol style="list-style-type: none"> 12. Wide dissemination of DEC publications, free of charge, to schools and at the community at large

4.1.5 CURRENT IMPLEMENTATION PRIORITIES

The following recommended list is a guide to current priorities. It was developed using the National Environmental Action Plan from the NEMS and the NBSAP process in consultation with the NECC. The current priority list will form the basis of an annual Implementation Plan to be developed in the future, identifying the actions from the NBSAP which should be either ongoing or new with funds (local or donor) provided, or new but requiring funding.

Ongoing Strategies & Activities:

1. *Survey and selection of priority conservation areas*

To support the rehabilitation of 'topside' and to promote and facilitate the establishment of more sites as reserves or protected areas around Nauru. These areas will need to fit in with land use plans but will serve a multi-purpose of preserving nature and as parks for enjoyment, education and sources of material for research and traditional medicines.

2. *Establishment of pilot Conservation Areas*

To set up two pilot Conservation Areas, the Anibare Bay Area and the Buada Lagoon Area that fulfill the following selection criteria:

Box 4.2

Criteria for 'Priority Conservation Sites'

1. Sites have wide range of terrestrial and marine ecosystems and biodiversity that are representative of Nauru as a whole
2. Sites should show least level of disturbance, highest species richness, the greatest numbers of rare or endangered species, and value as wildlife and marine habitats, in particular, noddy bird rookeries
3. Sites should contain culturally important and useful plants, animals and ecosystems of particular cultural and economic value to Nauruans, such as coconut breadfruit and Pandanus cultivars, mangroves, *Pisonia gradis* and other species that comprise the main noddy bird rookeries
4. The sites and biodiversity could be threatened by exploitation, degradation or conversion to non-sustainable use
5. The communities (resource owners & users) committed to participatory involvement in planning, implementation, monitoring and modification of the conservation initiative
6. The location of the conservation areas could facilitate the initiative in terms of logistics, cost and time constraints and the desire for the benefits to be spread among all Nauruans

3. *Protection and rehabilitation of endangered plants and animals*

In addition to the identification of priority ecosystems and sites for conservation, there is a need to identify individual plant and animal species that are rare or endangered, and to implement a system so that they can be registered and legally protected, and rehabilitated.

4. *Forestry and Agroforestry Development Plan*

To encourage a diverse forestry and agroforestry system for Nauru, a forestry and agroforestry development plan should be prepared. The Plan should address the loss of species and cultivar diversity on Nauru and to protect and establish trees in all appropriate ecosystems on the island.

5. *Establishment of a nursery system for endangered and culturally important plants*

To establish nursery systems, in all districts, for the propagation of endangered and culturally useful plants. The Rehabilitation Nursery to be established initially, could provide the seedlings to the district nurseries.

6. *Establishment of a Nauru National Botanic Garden and Arboretum*

The establishment of a Botanic Garden and Arboretum would provide an important recreational and educational resource for Nauru, would serve as a reserve for endangered and culturally valuable plants, and as a source of propagation material for selected lines of indigenous and exotic trees and plants.

7. *Environmental Impact Assessment*

To promote and encourage the use of EIA, as a normal, acceptable and integral component of development plans.

8. *Public Awareness & Media Campaign*

To systemically orient through public awareness and media campaign public attitudes toward environmentally sound and sustainable lifestyles – part of which is the wise use and care of their island biodiversity.

9. *Regular Reports on Status of Nauru's Biodiversity*

To build the capacity of the national government at providing broad and factual reports on the state of the country's biodiversity for the information and use of the international, regional, national and local communities.

Short Term Priorities (3-5 Years)

1. *Preparing Policies and Review of Regulations*

To review, harmonise and enforce existing and new regulations and respective roles carried out by government departments for the conservation and utilisation of the various elements of biodiversity conservation.

2. *Education: Formal and Information Courses*

To systematically educate individuals through formal and informal courses on the knowledge of the country's biodiversity and skills, both traditional and new, to sustainably manage these resources.

3. *Ratifying other relevant international and regional biodiversity treaties and conventions*

To investigate the potential and establish where appropriate the instruments for ratifying other regional and international conventions and treaties.

4. *Conservation & Sustainable Use 'Topside' Ecosystems*

To initiate a sustainable management of the rehabilitated topside ecosystems.

5. *Conservation & Sustainable Use of Marine Resources*

To initiate the conservation and sustainable use of inland lagoons and marine protected areas.

Long Term Priorities (10-15 Years)

6. *Economic Valuation of Natural Resources*

To establish a criteria for an economic valuation of Nauru's ecosystems and having it part of the country's Gross Domestic Product.

7. *Conservation Fund – Trust Fund for the Environment*

To investigate the potential and means of setting up a conservation or environment trust fund to pool financial resources earmarked for environmental conservation and protection actions.

8. *Further Strategic Studies of Nauru's biodiversity*

To undertake genetic and further scientific studies on remaining unexplored elements of Nauru's biodiversity.

4.1.6 EXPERT GROUPS

Implementation of the Nauruan NBSAP requires the best available and factual scientific information. Specific expert groups will be required to be established to generate information and give recommendations on appropriate actions for specific areas, such as biosafety, access to genetic resources, traditional knowledge, marine biodiversity and invasive species. Membership of such expert groups should be based on recommendations of the Department of Environment and Conservation (DEC), as the main biodiversity implementing agency, and the National Environmental Coordinating Committee (NECC).

4.1.7 NATIONAL BIODIVERSITY DATABASE

It is recommended that a national biodiversity database be established within DEC and the NBSAP Coordinator shall facilitate the collection and storage of biodiversity information for effective management of programmes.

To function effectively, it is recommended that all relevant information collected or researched about Nauru's biological and genetic resources, GIS maps on topography and land use, biodiversity related projects, and associated information as identified in the actions should be deposited in the national biodiversity database. Information from such a database should then be used for future development or conservation planning programmes.

4.1.8 NATIONAL CLEARINGHOUSE MECHANISM

A formal clearinghouse mechanism (CHM) needs to be established to ensure there is continual access of government agencies, statutory bodies, non-governmental organisations, local communities and private sector to the best available information on the management of biodiversity.

This mechanism should be developed in the form of a national biodiversity database (discussed in 4.1.7 above) to store the information but also enable the dissemination to the general public. All agencies and organisations working in biodiversity should be required to deposit information into the database. A web-based discussion line and newsletter are suggested to be incorporated as part of the National CHM to ensure regular updates for all stakeholders.

4.1.9 REGIONAL AND INTERNATIONAL LINKAGES

In recognising the need to work with Pacific neighbours and the international community to advance the conservation and sustainable use of biological and genetic resources, strong linkages must be made with regional and international organisations and expert groups, which can provide useful expertise and advice when not available locally. To assist with the implementation of the NBSAP, Nauru must therefore identify all regional and international groupings which can provide advice or assistance in the implementation of national actions.

4.2 MONITORING

To ensure the actions identified in the Plan and its consequent implementation are producing useful results, it is important to assess if such actions are making a change towards meeting the goals and objectives of the NBSAP.

The monitoring programme at Table 2 is to be used in reviewing the implementation and more importantly, to track any changes in the status of biological resources, and then to make sound and accurate decisions on future biodiversity work.

The monitoring should mostly include information generated from the national biodiversity database, while some additional information will have to be obtained from other sources such as field surveys and input from the NECC.

The Department of Environment and Conservation is responsible for the monitoring programme, with assistance provided through agencies and organisations present in the NECC.

4.3 REPORTING

Reporting on implementation can take two forms. The first is to report on the implementation of certain actions of the NBSAP annually, or every time the NECC meets, identifying which actions have been completed, which are ongoing and which are awaiting further resources. The second method is to use the Monitoring Matrix (see table 2) to assess if implementation is bringing about improvements in the status of biodiversity sought.



ANIBARE BEACH COASTLINE BEARING SIGNS OF DEBRIS FROM OVERTOPPING KINGTIDES

Table 2: NBSAP Implementing Monitoring Matrix

NBSAP Vision	Nauru’s biological and genetic resources are protected, conserved and sustainably managed to emphasise the desired outcome of a future where individual, community, business and government partnerships contribute to a sustainable quality of life for present and future generations.		
Strategic Objective 1. Biodiversity Management (Theme 2 & 3): To minimize the impacts on the native biodiversity while conserving them for present and future generations.			
INTENDED OUTCOMES	INDICATORS (measured every 2 years unless otherwise indicated)	MEANS OF MEASUREMENT	ASSUMPTIONS
1.1 The threats to biodiversity are prevented, eliminated or reduced	1.1.1 No. of programs in place to prevent, eliminate or reduce threats to biodiversity	<ul style="list-style-type: none"> ○ National biodiversity database update ○ Ministry corporate and work plans 	<ul style="list-style-type: none"> ○ Plans, policies and programs will be the first indicators of government action
	1.1.2 Change in coverage of native biodiversity and severity of threats (invasive species, rehabilitated land, coral reef destruction).	<ul style="list-style-type: none"> ○ GIS maps of land and coastal use changes ○ Complaints on biodiversity destruction ○ National Biodiversity Database 	<ul style="list-style-type: none"> ○ Reduction or alterations to native biodiversity can provide a snapshot on the health of ecosystems
	1.1.3 Change in incidence and severity of most urgent threats	<ul style="list-style-type: none"> ○ NBSAP or other national reporting 	<ul style="list-style-type: none"> ○ An increase in people’s awareness of the benefits acquired from the reduction of threats to biodiversity can alter their adverse environmental activities.
1.2 Species habitats and ecosystem processes are maintained or restored	1.2.1 Change in status of species populations	<ul style="list-style-type: none"> ○ Biodiversity monitoring program results ○ National biodiversity database ○ CA and protected areas monitoring programs 	<ul style="list-style-type: none"> ○ An increase in species population will indicate people’s favourable impact on species regeneration.
	1.2.2 a. No. type. Year established. Size of conservation and protected areas b. No. of CAs with effective management in place	<ul style="list-style-type: none"> ○ National biodiversity database 	<ul style="list-style-type: none"> ○ Protected & Conservation areas provide the best means for reasonable regeneration of species populations
	1.2.3 a. Types of habitats and species protected in conservation areas b. Change in health and integrity of key ecosystem types using existing data and rapid assessment tools (e.g. ReefCheck, BSAP inventories, etc.)	<ul style="list-style-type: none"> ○ National biodiversity database ○ Conservation Area reports 	<ul style="list-style-type: none"> ○ Will sample biodiversity using a small number of key ecosystem types. ○ Change should not be a reflection of increased information on existing sites but sites newly established during the life of the Action Strategy.

Strategic Objective 2. Mainstreaming Biodiversity (Theme 1):

To integrate conservation and sustainable use of biodiversity into all relevant sectoral policies, programmes and plans.

INTENDED OUTCOMES	INDICATORS (measured every 2 years unless otherwise indicated)	MEANS OF MEASUREMENT	ASSUMPTIONS
2.1 Government legislation, policies and programs integrate conservation and sustainable use of biodiversity.	2.1.1 No. of national and sectoral plans, policies and legislation that specifically integrate conservation and sustainable use of biodiversity.	○ National biodiversity database.	○ Not all legislation, policies and programs integrate conservation and sustainable use of biodiversity.
	2.1.2 Number of project and programs implemented by Government agencies integrating conservation and sustainable use of biodiversity.	○ National Biodiversity Database	○ Not all projects integrate conservation and sustainable use of biodiversity.
	2.1.3 EIA regulations have been introduced and utilised to minimise the impact of development on the biodiversity.	○ EIA regulations.	○ EIA regulations will minimise detrimental impacts on biodiversity.
	2.1.4 NBSAP is recognised as a priority issue for implementation in NSDS.	○ State of Environment Report ○ NSDS	○ More support for biodiversity implementation will happen if it is recognised as a national priority.

Strategic Objective 3. Community (Theme 4):

Empowering and encouraging the twelve district communities to protect, conserve and sustainably use and manage our biodiversity.

INTENDED OUTCOMES	INDICATORS (measured every 2 years unless otherwise indicated)	MEANS OF MEASUREMENT	ASSUMPTIONS
3.1 District communities and resource owners manage their resources cooperatively for conservation and sustainable development	3.1.1 No. of community based conservation areas and conservation initiatives in place. 3.1.2 No. of community empowerment trainings completed.	○ DEC reporting	○ Most communities act upon greater understanding of the benefits from conservation and sustainable use of biodiversity.
3.2 Greater participation and representation of local communities in the development and implementation of natural resource plan.	3.2.1 No. of national and sector plans and development projects a. that were developed and implemented with community participation b. that recognise the rights of communities and customary owners c. that provide for cooperative management of natural resources with communities and customary owners.	○ NECC reporting ○ National biodiversity database	○ Local communities understanding and participation in planning process will contribute to balanced implementation.

○

Strategic Objective 4. Access and Benefit Sharing from the Use of Genetic Resources (Theme 4):

Nauru's genetic resources are accessible for utilisation and benefits are equitably shared amongst the stakeholders.

INTENDED OUTCOMES	INDICATORS (measured every 2 years unless otherwise indicated)	MEANS OF MEASUREMENT	ASSUMPTIONS
4.1 National measures for access and benefit sharing from the use of genetic resources established.	4.1.1 Legislations and policy formulated to facilitate access and benefit sharing measures.	<ul style="list-style-type: none"> ○ National biodiversity database. 	<ul style="list-style-type: none"> ○ Establishment of national measures will reduce incidences of biopiracy.

Strategic Objective 5. Biosecurity (Theme 6):

To protect Nauru's native biodiversity from impacts of alien invasive species and imported earth materials, through effective border control, effective quarantine and eradication programmes.

INTENDED OUTCOMES	INDICATORS (measured every 2 years unless otherwise indicated)	MEANS OF MEASUREMENT	ASSUMPTIONS
5.1 Appropriate policies and legislation to ensure the effective management of biosecurity established.	5.1.1 Biosecurity legislations, policies and plans established.	<ul style="list-style-type: none"> ○ Legislation ○ National biodiversity database 	<ul style="list-style-type: none"> ○ Effective national measures will control the introduction and spread of alien invasive species.
5.2 Local capacity built to control impacts of alien invasive species introduction.	5.2.1 Training programs and projects undertaken to control and eradicate alien introductions.	<ul style="list-style-type: none"> ○ DEC, Fisheries and Agriculture Work Plans ○ National biodiversity database 	<ul style="list-style-type: none"> ○ Well trained and equipped agencies will reduce the risk of spread of alien species.

○

Strategic Objective 6. Financial Sustainability (Theme 8):

To secure long term sustainability of all Conservation and Biodiversity related programmes by way of access to funding mechanisms from local and international sources.

INTENDED OUTCOMES	INDICATORS (measured every 2 years unless otherwise indicated)	MEANS OF MEASUREMENT	ASSUMPTIONS
6.1 Increased funding from local and national sources.	<p>6.1.1 Total local funding, % of total and no. of donors from local and national sources to support environment agencies conservation sites, programs and national NGOs.</p> <p>6.1.2 Government Expenditure: Expenditure for conservation & natural resource management activities (environment, fisheries, agriculture, forestry) in agencies. National Budget: extent to which these expenditures are differentiated in agencies/national budgets.</p>	<ul style="list-style-type: none"> ○ National biodiversity database with information from NGO community, Treasury & Finance and DEC. 	<ul style="list-style-type: none"> ○ Diversity of sources will increase financial sustainability. ○ Total local/national financing of conservation programs in Nauru is not feasible, and continued donor support will be essential.
6.2 Increased commitment by international community to financing NBSAP implementation.	<p>6.2.1 Total international funding (multilateral, bilateral, NGO) for conservation and natural resource management programs.</p> <p>6.2.2 No. of international funding commitments or programs (including phased programs and projects of >5 years to conservation and natural resource management program.</p>	<ul style="list-style-type: none"> ○ MFA, DEC, NGO community ○ National biodiversity database 	<ul style="list-style-type: none"> ○ The international community is committed to supporting favourable efforts towards biodiversity conservation at the grassroots.
6.3 Developed new conservation funding mechanisms (short- & long-term)	6.3.1 No., type and level of new conservation funding mechanisms in process or established	<ul style="list-style-type: none"> ○ National biodiversity database 	<ul style="list-style-type: none"> ○ Limited knowledge and experience in developing new financing mechanisms.
○			

5. PROJECT BRIEFS

This chapter consists of a range of objectives and associated project concepts derived from the list of activities and their current implementation priorities as recommended in chapters 3 and 4, that could be implemented to address main environmental issues and constraints to conservation of biological diversity in Nauru.

The project concepts are not necessarily listed in order of importance, although some, such as the rehabilitation of the mined-out areas of Nauru, the strengthening of environmental awareness and education, the strengthening of environmental infrastructure planning and environmental legislation, the protection of endangered terrestrial and marine resources, waste management and pollution control, rehabilitation of traditional and cultural lifestyles, are seen as essential to the promotion of environmentally sustainable development in Nauru. Some of the suggested objectives and the specific project concepts suggested under these objectives may simultaneously address two or more issues.

Project No. 1	
Project Title:	Establishment of the Coordinator of NBSAP
Agencies Responsible:	CIE
Objectives:	Strengthening environmental institutions and legislations
Duration:	3 years
Project Concept:	<p>Although many government agencies and NGOs are involved in worthwhile activities related to environmental management and the promotion of sustainable development, these activities are often carried out in isolation from one another. There is great potential for gaining strength and synergy by coordinating these individual efforts through a National Environmental Coordinating Committee (NECC) to facilitate and coordinate the increasing integration of environmental concerns into the policy-making and development planning processes. The Coordinator of National Biodiversity Strategy and Action Plan (NBSAP) will provide the secretariat office, under the guidance of the Secretary for Commerce Industry and Environment, to the NECC, and be responsible for the implementation of all NBSAP activities as approved by the NECC.</p>
Costs:	US\$80,000
Project No. 2	
Project Title:	Establishment of a Nauru Environmental Information System through the National Environmental Resource and Information Centre (NERIC)
Agencies Responsible:	CIE
Objectives:	Strengthen environmental institutions and legislation
Duration:	3 years
Project Concept:	To establish the National Environmental Resource and Information Centre (NERIC) to develop a database of base-line environmental information, environmental management and sustainable development information

storage, continual update and dissemination to the Nauru public.
Costs: US\$250,000
Project No. 3
Project Title: Review of environmental legislation
Agencies Responsible: CIE, Legal Department
Objectives: Strengthen environmental institutions and legislation
Duration: 1 year
Project Concept: Because of the inadequacy of, ignorance of, or non-enforcement of existing environmental legislation, it is important to review it in relation to environmental management and the promotion of sustainable development. There is also the need for regulations to be clarified and advertised through an awareness campaign, possibly through NERIC. There is a need for new environmental legislation, for EIA for example, and to assess whether it is desirable to have a single body of environmental legislation to cover for all GEF environmental focal areas.
Costs: US\$100,000
Project No. 4
Project Title: Survey and selection of priority Conservation Areas
Agencies Responsible: CIE, Rehabilitation
Objectives: Conservation of biodiversity
Duration: 2 year
Project Concept: To undertake a more comprehensive baseline survey and checklist established to ascertain how many possible sites still exist, how many should be proposed and what strategy should be followed to achieve a representative sample of both terrestrial and marine vegetation types and habitat. The baseline data survey which is inclusive of all ecosystems of Nauru, can be undertaken with or independent of NACRDFS and the information used as basis for designing a management plan for each conservation site. A network of Conservation Areas so established will need to fit into the overall land use plan, to support national efforts to foster ecological and economic development.
Costs: US\$200,000
Project No. 5
Project Title: Establishment of 2 pilot Conservation Areas and a Marine Reserve
Agencies Responsible: CIE, Agriculture, Fisheries and Rehabilitation
Objectives: Conservation of Biodiversity
Duration: 2 years

Project Concept:	Once priority conservation areas and species surveys have been completed in Project No. 4, then two pilot Conservation Areas (CAs) should be established for Nauru. The areas suggested (to be confirmed by proceeding project studies) for the establishment of pilot CAs are the Anibare Bay-Ijuw Area and the Buada Lagoon Area. These areas are considered to be of highest priority owing to the unique ecological importance and high visual quality of their ecosystems. A Marine Protected Area (MPA) should be established also to improve marine biodiversity resources. The establishment of pilot conservation areas and an MPA will be based on community partnership and ownership of the CAs and MPAs.
Costs:	US\$250,000
Project No. 5	
Project Title:	Protection and rehabilitation of endangered plants and animals
Agencies Responsible:	CIE, Agriculture, Fisheries
Objectives:	Conservation of Biological Diversity
Duration:	2 years
Project Concept:	In addition to the identification of priority ecosystems and sites for conservation, there is a need to identify individual plant and animal species that are rare or endangered, and to implement a system so that they can be legally protected and rehabilitated. Establishment of a Nauru National Botanical Garden and Arboretum would provide an institution for study, research and a reserve for endangered plants and animals, and culturally valuable plants, and as a source of propagation material for selected lines indigenous and exotic trees and plants.
Costs:	US\$200,000
Project No. 6	
Project Title:	Forestry and Agroforestry Development Plan
Agencies Responsible:	CIE, Agriculture
Objectives:	Conservation of Biological Diversity
Duration:	1 year
Project Concept:	Various studies have shown that the planting and protection of trees and tree-like plants have been central to the maintenance of diverse forestry and agroforestry systems throughout the Pacific and low-lying atolls. It is therefore important to prepare a forestry and agroforestry development plan to address the loss of species and cultivar diversity in Nauru and to protect and establish trees in all appropriate ecosystems on the island. The Plan should include local plants that will serve as coastal protection structures against coastal erosion and storms.
Costs:	US\$100,000
Project No. 7	
Project Title:	Institutionalising an EIA System in Nauru

Agencies Responsible:	CIE, Aid Coordinating Unit, DPPD, all Departments, Private sector, NGOs
Objectives:	Strengthening environmental institutions and legislations
Duration:	2 years
Project Concept:	It is necessary to set up an appropriate EIA system in place to implement the Environment Legislation once approved by Parliament. First of all, a broad EIA awareness raising workshops should be conducted in-country to senior government officials, the planning officials, the private sector and the district communities. Then technical training workshops follow on to establish an EIA process for Nauru, that includes linking environmental considerations into the current economic planning system in Nauru. The training workshops will also conduct EIA case studies. The desired output will be the publication of set of the EIA Process and Guidelines for Nauru that should be widely distributed through government and the private and community sectors.
Costs:	US\$80,000

6. APPENDICES

6.1 REVIEW OF NAURU'S BIODIVERSITY

6.1.1 INTRODUCTION

The Republic of Nauru is one of the smallest independent nations in the world with a land area of only 22 sq km (2,200 ha) and about eight thousand Nauruans. Nauru is a raised coral-limestone island (formerly an atoll) underlain by a volcanic seamount that rises from the floor of the Pacific Ocean. Fossil pollen studies and dating techniques indicate that the limestone is of upper Miocene (5 million years) to Quaternary (0.3 million years) age at the depths tested by drilling while the volcanic seamount may be mid-Eocene (35 million years) in age. The island, located at 0° 32' S. latitude and 166° 56' E. longitude, is isolated from other Micronesian island groups by 300 km and from the larger landmasses of Papua New Guinea and Hawaii by over 5000 km.

Nauruans had lived a sustainable lifestyle and in tune with the island environment for some three thousand years until the nineteenth century when European contact was made and subsequently, the island and distinct culture became seriously exploited and degraded. Coconut monoculture of the island during the colonial period, followed by widespread destruction and displacement of people during World War II, and almost a century of open-cast phosphate mining has now made Nauru one of the most environmentally degraded areas on earth.

There is now serious breakdown of the Nauru physical environment as well as the socio-economic wellbeing of our people. If this environment trend is not reversed, Nauru will not survive, as we know her, into the twenty-first century and beyond. The purpose of this Biodiversity Strategy and Action Plan is to guide the rehabilitation focus, conservation efforts and sustainable management of Nauru island way of life that will remain healthy and productive for the benefit of our future generations.

6.1.2 NAURU'S BIODIVERSITY

6.1.2.1 TERRESTRIAL LIFE

A. Flora and Vegetation

The indigenous flora and vegetation of Nauru are limited. Because of Nauru's small size, limited habitat diversity and its physical isolation from the Asian continent and other islands, only 60 indigenous species of vascular plant (that is, ferns, gymnosperms and flowering plants, and excluding non-vascular plants, such as mosses, lichens etc.) have been recorded from the island. There are no endemic plants (unique to Nauru).

The total number of vascular plants, including introduced species, amounts to over 500. The introduced species consist mainly of ornamentals, weed species, food plants, and a number of other useful cultivated plants. Although greatly outnumbered by exotics, the indigenous species still constitute the most culturally useful and ecologically important species. Because of the unique adaptability of indigenous Pacific Island plants to the harsh conditions of coastal and small-island environments, and their cultural and ecological utility, their protection and enhancement are crucial as a basis for sustainable development in Nauru.

The main primary vegetation types are coastal strand vegetation, mangroves and coastal marsh vegetation, inland forest, and limestone escarpment or pinnacle vegetation.

The secondary vegetation types include coconut lands under various degrees of maintenance, urban gardens, ruderal vegetation along roadsides and in open lots and other disturbed areas on Bottomside, and a mosaic of various stages of natural regeneration in the mined areas on Topside.

The majority of Nauru is covered with vegetation of some kind, but only about 364 ha or about 16.5 per cent of the islands vegetation is dominated by indigenous species. The indigenous *Calophyllum (iyo)* forest at Topside accounts for about 37 ha of this, but most have now been cleared for mining. Other indigenous, primary vegetation, such as small areas of mangroves and coastal vegetation, occupy only very small areas, and are in urgent need of conservation.

Out of Nauru's total land area of 2,200 ha, 1,366 ha (63%) of the vegetation cover comprises regeneration after mining. The very tall closed forest around Buada Lagoon area extends over approximately 68 ha, and is regarded as the best potential forestry conservation area in Nauru and had been identified as a priority conservation area in both the land use plan proposed for the NEMS and the National Rehabilitation Programme.

Nauru's flora is made up of 63 indigenous species. Eight are widespread tropical ferns or pteridophytes, and among the flowering plants, there are seven monocotyledons and 48 dicotyledons (Table 6.1).

Table 6.1 Enumeration by Family of the flora of Nauru

GROUP	Pre-1980		1980-90s		2007		Subtotals		Total Species
	Indg	Intro	Indg	Intro	Indg	Intro	Indg	Intro	
Pteridophytes	2	-	7	3	6(1)	2 (1)	8	4	12
Gymnosperms	-	-	-	2	-	5	-	5	5
Monocotyledons	3	3(1)	6	136	7(1)	84(27)	7	164	171
Dicotyledons	28(2)	37(7)	43	281	40(3)	225(49)	48	337	385
TOTAL	33(2)	40(8)	56	422	53(5)	316(77)	63	510	573

Note: no. in parentheses indicates the no. of new species not reported earlier.

Indigenous monocotyledons are restricted to pandanus, **epo (epuh)** (*Pandanus tectorius*) and the coconut palm, **ini** (*Cocos nucifera*), cultivars of both which are aboriginal introductions, and a small range of sedges and grasses (Cyperaceae and Poaceae), some of which might be aboriginal or recent introductions. The grass *Stenotaphrum micranthrum* is considered to be endangered or now absent.

The indigenous dicotyledons consist almost exclusively of salt-tolerant, widely dispersed, pantropical coastal species. Of the 48 herbaceous and woody dicotyledons, half (23) are endangered or rare (Table 6.2), and are represented by only a few remaining individuals, often in household gardens, or in local communities.

Exotic (introduced) species, which constitute 89 per cent (510 out of a total of 573 reported species) of the flora of Nauru, dominate ruderal, household and urban vegetation, and include a wide range of ornamentals, weedy species, food plants and a number of other useful species.

Ornamentals, which are normally confined to houseyards and village gardens, comprise some 51 per cent (261) of the 510 exotic species. Weedy species make up 15 per cent (80 of 510 species), indicating both the poverty of the indigenous flora and the highly disturbed nature of the vegetation. Food plants represent 16 per cent of exotic flora, many of these species are restricted in numbers or utility, owing to the harsh environment, limited land area and limited focus on food production in Nauru. Other useful exotic species include kapok (*Ceiba pentandra*), cotton (*Gossypium barbadense*), tobacco (*Nicotiana tabacum*) and bamboo (*Bambusa vulgaris*), which were all reportedly more abundant in the past. Some larger weedy exotics, such as *Adenantha pavonina*, *Annona* spp., *Casuarina equisetifolia*, *Lantana camara*, *Leucaena leucocephala*, *Mangifera indica*, *Muntingia calabura* and *Psidium guajava* have become naturalised and competitive with the indigenous species in some disturbed and relatively undisturbed sites.

(i) Ecological and Cultural Importance of Nauru's Plants

The vegetation and flora of Nauru although highly disturbed and outnumbered by introduced exotics, still constitute a critical ecological and cultural resource to the people of Nauru. This is particularly true for the indigenous species, virtually all of which had wide cultural utility within the traditional subsistence economy.

The most important ecological functions of Nauru's plant resources include the provision of shade to humans and animals, animal and plant habitats, protection from wind, erosion, flood and saltwater intrusion, land stabilization, protection from the desiccating effects of salt spray, soil improvement and mulching. All of these functions are seen as critical to the sustainable habitation of Nauru.

Preliminary analysis indicates some 174 purposes or use categories for 40 indigenous species, an average of over four uses per species. There are 434 uses for 354 exotic species, an average of 1.2 uses per species. This gives a combined total of 608 use/purpose categories for 394 species (1.5 uses per species). Twenty (20) indigenous and 80 exotic species had no reported uses.

Table 6.2 lists the indigenous fern, herbaceous, shrub and tree species that have been recorded present in Nauru over the past century and an assessment of the conservation status of these species.

Table 6.2: Threatened Status or Loss of Important Indigenous and Culturally Important Species

Scientific Name	Nauruan Name	Abundance			Conservation Status and Comments
		Pre-1980s	1980s	2007	
FERNS					
<i>Asplenium nidus</i>	?	+	R*	-E?	Extinct. Used as ornament
<i>Nephrolepis biserrata</i>	Dageang	-	C	O?	Probably occasional, but previously mistaken for <i>N. hirsutula</i> .
<i>Nephrolepis hirsutula</i>	Dageang	-	C?	A	Abundant in closed and open forest & regrowth areas.
<i>Ophioglossum petiolatum</i>	?		R	-	Rare and Threatened , possibly extirpated or ephemeral.
<i>Microsorium grossum</i>	Dageang, dakeang ini makin	+	V	A	Original understorey vegetation in <i>Calophyllum forest on Topside</i> .
<i>Psilotum nudum</i>	Ibiribir	+	O	R	Rare and Threatened. Found in some remnant forest stands.
<i>Pteris tripartite</i>	Dageang		U	O	Occasional near bases of limestone pinnacles and the lower escarpment.
* <i>Pteris vittata</i>	Dageang	-	-	O	Occasional in mined areas.
HERBS, GRASSES AND SEDGES					
<i>Achyranthes canescens</i>	?	+	-	-	Extirpated. Reported in 1888 and 1935, but not since.
* <i>Boerhavia repens</i>	?	-	U	U	Found in ruderal sites on coastal plain.
<i>Laportea ruderalis</i>	?			R	Rare and Threatened. Seen only on limestone cliff in Anibare in 2007.
<i>Mariscus javanicus</i>	Reyenbangabanga	-	A	C	More common in 1980s than now.
<i>Digitaria setigera</i>	Ibugibugi	+	O	O	Possibly indigenous, probably an early introduction.
<i>Lepturus repens</i>	Ibugibugi	-	C	C	Common indigenous grass in coastal vegetation and in disturbed sites.
<i>Sternotaphrum micranthrum</i>	Ibugibugi		R	U	Threatened. Uncommon grass on escarpment and base of pinnacles on inner coastal plane.
<i>Canavalia cathartica</i>	Erokogo, irekogo	+	U	O	Vulnerable. Climbing vine in coastal thickets and on the escarpment.
<i>Canavalia rosea</i>	erekogo	-	R	-	Rare or ephemeral. Seen only as a single drift seedling in 1980s.
<i>Capparis guiniflora</i>	Ekaretsit	-	U	O	Vulnerable. Thorny vine in undisturbed limestone escarpment vegetation.
<i>Cassytha filiformis</i>	Denuwanini	-	A	A	Common leafless parasite.
<i>Derris trifoliata</i>	?	-	R	R?	Rare. Possibly extinct.
<i>Ipomoea littoralis</i>	?	-	R	R?	Rare , possibly present.
<i>Ipomoea macrantha</i>	Erekogo, irekogo	-	O	O	Coastal and escarpment vine.
<i>Ipomoea pes-caprae</i>	Erekogo, irekogo	+	A	A	Abundant coastal vine, also found in disturbed areas.
<i>Vigna marina</i>	Erkogo, irekogo	+	C	C	Creeping and climbing coastal vine.

SHRUBS					
<i>Abuliton asiaticum</i>	Eenkaura	+	U	O	Threatened. Shrub in inner disturbed coastal and escarpment vegetation.
<i>Caesalpinia bonduc</i>	Dogiennae	-	U	O	Increasing invasive thorny shrubby vine.
<i>Capparice cordifolia</i>	Ekabobwiya	+	O	C	Vulnerable. Shrub on limestone coastal cliffs.
<i>Clerodendrum inerme</i>	Eamwiye	+	C	C	On coastal limestone and bordering mangroves.
<i>Columbrina asiatica</i>	Ewongup	+	C	C	In thickets from base to the top of escarpment.
<i>Dodonaea viscosa</i>	Eteweo, eteweau	+	C	C	Shrub in regenerating mined areas.
<i>Chamaesyce atoto</i>	Emai	+	R	E?	Rare. Probably and ephemeral littoral beach plant.
<i>Phyllanthus societatis</i>	Ewemangemang		O	O	Vulnerable. Small subshrub in open indigenous forest.
<i>Scaevola taccada</i>	Emet, emed	+	V	V	Shrub on coast, topside and in regenerating mined areas.
<i>Sida fallax</i>	Ekaura, idibinkaura	+	U	E?	Extirpated. Subshrub in disturbed sites on Bottomside and Topside. Not seen in 2007
<i>Triumfetta procumbens</i>	Ikiiau, igiaou	+	U	R?	Rare or Extirpated in house-yard gardens in the 1990s.
<i>Suriana maritima</i>	?	-	R	E?	Extirpated. Seen once as drift seedling on beach.
TREES					
<i>Aidia racemosa</i>	Enga	+	R	R	Rare, highly Threatened, tree in escarpment forest. Fruit eaten.
<i>Barringtonia asiatica</i>	Kwenababai	+	O	O	Vulnerable. Rare in coastal areas and escarpment and uncommon in house gardens.
<i>Bruguiera gymnorrhiza</i>	Etum, etam	+	O	O	Vulnerable. Dominant in back- beach basin ponds.
<i>Calophyllum inophyllum</i>	Iyo	+	V	C	Vulnerable. Dominant in original Topside forest.
<i>Cerbera manghas</i>	Dereiyongo	-	U	O	Vulnerable. Tree in settled areas.
<i>Cordia subcordata</i>	Eongo, eoongo	-	O	R	Rare, Seriously Endangered. Seen only in 4 sites, in need of replanting.
<i>Erythrina variegata</i>	Yoreh, yora	-	U	O	Vulnerable. Seen in settled areas.
<i>Fagraea berteriana</i>		+	-	-	Extirpated. Not seen or reported since 1910.
<i>Ficus prolixa</i>	Eyayo, eao	+	V	A	Dominant on limestone pinnacles on Topside.
<i>Guettarda speciosa</i>	lut	+	C	O	Component of escarpment and Topside forest.
<i>Hernandia nymphaeifolia</i>	Etui, yetiu	-	U	U	Threatened. Seen in only 3 sites near base of escarpment.
<i>Hibiscus tiliaceus</i>	Ekwane	+	A	A	Abundant tree near base of escarpment.
<i>Morinda citrifolia</i>	Deneno	+	C	C	Common understory tree in disturbed areas.
<i>Ochrosia elliptica</i>	Eorara, oerara	+	C	O	Threatened. Understorey tree in topside and escarpment.
<i>Pandanus tectorius</i>	Epo, epuh	+	C	O	Threatened. Uncommon in coastal vegetation. Many traditional named cultivars now lost or rare.

<i>Pisoniagrandis</i>	Yangiys, yangits	-	U	O	Vulnerable. One grove on crest of escarpment, north of Anibare Bay. One main rookery and nesting trees for noddy birds.
<i>Premna serratifolia</i>	Idibener	+	C	C	Tree in disturbed open sites.
<i>Rhizophora stylosa</i>	Dadongo	-	R	R	Rare and Threatened. Found in one population near ponds in Ijuw District in 1990s.
<i>Tarenna sambucina</i>	?	+	-	-	Extirpate. Last reported 1935.
<i>Terminalia catappa</i>	Eteto, etetah	-	C	C	Tree in escarpment and Topside forest.
<i>Terminalia samoensis</i>	Deukin	-	U	O	Vulnerable. Possibly original coastal tree, important medicinal tree.
<i>Thespesia populnea</i>	Itira, itirya	+	O	O	Vulnerable. Rare along the coast.
<i>Tournefortia argentea</i>	Irin	-	C	O	Threatened. Tree in degraded coastal littoral vegetation.
<i>Vitex trifolia</i>	Dogaidu	+	O	O	Vulnerable. Tree near base of escarpment and inner coastal vegetation.

Key to symbols used under Abundance Column:

V	=	very abundant	A	=	abundant
C	=	common	O	=	occasional
U	=	uncommon	R	=	rare
E	=	locally extinct	?	=	unsure of identity/abundance
+	=	reported present in pre-1980s surveys with no information on abundance, -			not reported present during a given time period.
*	=	indicates new species not previously reported before 2007.			

Source: The vegetation and flora of Nauru 2007, MCIE, Nauru

B. Terrestrial Fauna

Nauru's main indigenous land animals consist of birds, insects and some land crabs. Some of these constitute resources of considerable importance to sustainable development, both in terms of their ecological and cultural utility and their possible importance to the development of National Reserves and a limited tourist activity. There are no indigenous land mammals in Nauru, with the Polynesian rat (*Rattus exulans*) being probably an aboriginal introduction. Other introduced rats, dogs, cats, pigs and chickens are common.

Reptiles are limited to geckos and skinks (*Gehrya* and *Emoia* species) which are abundant. The coconut crab (*Birgus latro*) is apparently, quite scarce, but a range of other smaller land crabs are often observed among the pinnacles of the escarpment and on the coastal strip. Some collection of invertebrates has been carried out, with the identification in 1993 of five species of fruit fly (*Bactrocera*).

Sea birds or migratory species constitute the most visible and among the most culturally important indigenous animals of Nauru. A total of 25 species of birds were recorded in Nauru in 1962, including nine species resident all year, nine passage migrants and vagrants, six winter residents, and one unconfirmed record, the sacred kingfisher (see Table 6.3). The single species regarded as endemic is the Nauruan reed warbler or Nauru canary (*Acrocephalus rehsei*). Brown and black (white-capped) noddies (*Anous stolidus* and *Anous minutes*, respectively), common fairy terns (*Gygis alba*) and the great frigate-bird (*Fregata minor*) are all culturally important.

PHOTO TREES RECOVERING FROM PROLONG DROUGHT PERIODS



Table 6.3: Indigenous Bird Species in Nauru

COMMON NAME	LATIN NAME	STATUS
Audubon's shearwater	<i>Puffinus lherminieri</i>	V
White-tailed tropic bird	<i>Phaethon lepturus</i>	R
Red-tailed tropic bird	<i>Phaethon rubricauda</i>	V
Brown booby	<i>Sula leucogaster</i>	V
Great frigate-bird	<i>Fregata minor</i>	V
Pacific reef heron	<i>Egretta sacra</i>	R
Gray/black-bellied plover	<i>Pluvialis squatarola</i>	V
Lesser golden plover	<i>Pluvialis dominica</i>	W
Mongolian plover	<i>Charadrius mongolus</i>	V
Great sand plover	<i>Charadrius leschenaultii</i>	V
Wandering tattler	<i>Heteroscelus incanus</i>	W
Siberian/grey-tailed tattler	<i>Heteroscelus brevipes</i>	W
Whimbrel	<i>Numenius phaeopus</i>	V
Bar-tailed godwit	<i>Limosa lapponica</i>	W
Ruddy turnstone	<i>Arenaria interpres</i>	W
Sharp-tailed sandpiper	<i>Calidris acuminata</i>	V
Black-naped turn	<i>Sterna sumatrana</i>	R
Sooty tern	<i>Sterna fuscata</i>	R
Brown noddy	<i>Anous stolidus</i>	R
Black noddy	<i>Anous minutus</i>	R
Common fairy tern	<i>Gygis alba</i>	R
Micronesian pigeon	<i>Ducula oceanica</i>	R
Long-tailed cuckoo	<i>Eudynamis taitensis</i>	W
Sacred kingfisher	<i>Halcyon sancta</i>	?
Nauru reed warbler, Nauru canary	<i>Acrocephalus rehsei</i>	R(E)

Key to Status:

- R = resident all year, but not necessarily breeding
- M = migratory breeder, which breeds at the locality, but departs for the rest of the year
- V = includes passage migrants as well as vagrants
- W = winter resident: some species visit during the austral winter and some during the northern hemisphere winter
- E = endemic
- ? = unconfirmed record

Source: National Environmental Management Strategies, Nauru 1998.

6.1.2.3 MARINE LIFE

A Marine Resources

Despite the limited extent of its coral reefs, intertidal zone and its 200-mile Exclusive Economic Zone (EEZ), Nauru has a relatively rich marine biota. The main categories of marine resources include a wide range of finfish and a more limited range of turtles, crustaceans, octopus, shellfish, holothurians (bêche-de-mer), other invertebrates and algae. Nauru is estimated to have between 300 and 500 finfish species alone.

Nauru's main fisheries zones are:

- (1) the fresh to brackish water ponds, including Buada Lagoon and the systems of sinkholes found inland from the coast;
- (2) the shallow fringing reef or intertidal zone;
- (3) the subtidal areas and reef slope including fissures or canyons in the reef slope (to about 25 m depth);
- (4) the deep reef and near-shore deepwater areas below 25 m; and
- (5) the open ocean or pelagic fishery.

All of these areas are of critical subsistence importance, as well as being of limited local commercial importance. The first four zones are usually considered to be part of the inshore fishery and the latter referred to as the offshore fishery. The resources at zones 1 to 3 are heavily exploited while zone 4, the deep reef and near-shore deepwater areas, are being increasingly exploited as well. Most of the potential for increased commercial catches is therefore from deepwater offshore species (snapper and sharks) and pelagic species (mainly tunas) in Nauru's EEZ, an area of approximately 320,000 sq km. There is however, some potential for strengthening the aquacultural production of **ibiya** or milkfish (*Chanos chanos*) in the brackish water ponds on land.

B. Status of Marine Resources

There is a wide and diverse range of marine resources available for sustainable harvest in Nauru. The resilience of the resource is evidenced by the fact that, despite many years of daily reef gleaning, it is still possible for some families to glean their daily protein needs from the intertidal zone and fringing reefs areas.

However, the increasing scarcity of many formerly more common marine organisms such as turtles, large reef cod, squirrelfish, drummers and turban shells is well known. This situation underlines the need for protective legislation and sustainable harvesting and management strategies.

Fortunately, the conservation ethic remains strong among some Nauruans and there are some traditional and modern conservation practices that should now be used to protect the sustainability of the marine resource.

6.1.3 DECLINE OF BIODIVERSITY

6.1.3.1 LOSS OF BIODIVERSITY

Significant declines are evident in all fauna and flora groups studied recently. The start of such declines would have come from the early European introduction of coconut monoculture, the destruction of the Second World War and the extensive phosphate mining on the island over the past century.

The natural environment of Nauru has been greatly affected by the forest clearance at Topside, the mining operations and its impacts in coastal and marine areas, and by pollution and over exploitation of the sea's natural resources.

A significant impact of the mining operations on biodiversity is the dramatic change in the socio-economic system in Nauru from that of natural resources dependent (subsistence) lifestyle to that of a cash-driven economy. The drastic resultant effect is that the biodiversity is heavily degraded but at the same time, it eroded away the basic cultural values, the traditional economic social structure and lifestyle of the Nauruan that is critical for the sustainable management of natural resources.

Rehabilitation of the biodiversity of Nauru in terms of sustainable management of the ecosystems, species and variety of plants and animals, is crucial to the improvement and promotion of a sustainable Nauruan island way of life that will bring a better quality of life for all. Several factors causing the decline of biodiversity need to be addressed.

A Loss of Ecosystem Diversity

In 1994 only 37 ha remained of the original Topside *Calophyllum* forest, and almost all of that is now lost to mining. Similarly, because of the pressure of residential development, Bottomside sites now contain very little surviving natural vegetation. It is critical that some of the remaining natural areas and their component ecosystems are preserved immediately; to avoid the high cost and uncertainty of future revegetation programmes to recreate the original ecosystems and forest types of Nauru.

Preservation of examples of original ecosystems could be achieved through some form of conservation zones and these should be taken up as highest priority in the rehabilitation process of Nauru. Special consideration should be given to those areas containing culturally important and useful plants, such as coconut, breadfruit and Pandanus cultivars, mangroves, *Pisonia grandis* and other species that comprise the main noddy bird rookeries.

B Loss of Species Diversity

One consequence of the reduction in area of natural vegetation is that some of the less common species of plants and animals have become very restricted either in distribution or in the numbers of individuals in their remaining populations. As a result, up to 45 per cent of Nauru's indigenous plant species (28 out of 60) and a significant proportion of bird species are considered to be rare or endangered. While these species, with the exception of the endemic Nauru canary, are not restricted to Nauru, it is likely that their populations have been isolated for some time and contain unique genetic material. In addition, many culturally important trees and other plants and plant varieties have been lost or reduced to a few individuals. These also need to be protected and conserved.

These rare or endangered species will become extinct or extirpated if the current trends in reduction of their populations continue. Some species and varieties known to older Nauruans (such as *enga* and Pandanus varieties) are no longer found in Nauru and presumed to be extinct or extirpated. For this reason, it is suggested that special programmes be established to identify, register and conserve or preserve endangered species and varieties of Nauru's plants and animals, including noddy birds.

6.1.3.2 CORAL REEF AND MARINE RESOURCE DEGRADATION

Degradation and overexploitation of the intertidal zone, subtidal coral reefs, reef slope and pelagic (open ocean) fisheries resources are seen as major constraints to sustainable development. But equally important is the breakdown of the traditional marine tenure systems and resource use systems, including the traditional aquacultural system that has exacerbated the loss of biodiversity in Nauru.

6.1.3.3 PEST AND DISEASE INFESTATION

The current lack of quarantine regulations and facilities in Nauru is an issue that is of wide concern. Currently, pests and disease organisms (whether plant, animal or micro-organism) are introduced unchecked to Nauru through air and sea transport terminals. Several pest species such as a range of aggressive weed species and a number of fruit flies are now present in Nauru which is also suffering from an increase in population of pests and disease vectors such as flies, mosquitoes, cockroaches and rats, and including 14 species of fruit fly, moths, mites, scale insects, snails, beetles, weevils, borers and termites. These species have an impact on both the urban and natural environments and can reduce the quality of life for Nauruans by spreading diseases.

6.1.3.4 POLLUTION AND WASTE MANAGEMENT

The issues of air, noise, oil and water pollution and waste management have always been linked to the impacts of the mining operations that affect both the natural and urban environments, and especially the human health.

6.1.3.5 POPULATION GROWTH AND URBANISATION

Population growth and urbanization put increasing pressure on natural and cultural resources and constitute a major constraint to sustainable development in Nauru. There are already clear signs of land shortage and increasing population pressure on scarce resources, such as water, noddy birds and marine resources.

Uncontrolled urbanization has increased population density and declining productivity of the land. Most of Nauru's people now live urban lifestyles. This has led to the loss of traditional knowledge about plants and animals and the environment and the abandonment of subsistence living to that of cash-dependent lifestyles. From an environmental and cultural perspective, urbanisation has not only put more pressure and polluted the Nauru environment, but has also produced a current generation of Nauruans who have little traditional environmental knowledge. Traditional environmental knowledge must therefore become a priority to be taught and encouraged to full utility by all Nauruans as part of their normal lives.

6.1.3.6 CLIMATE CHANGE AND SEA LEVEL RISE

Potentially very serious impacts on biodiversity could result from changes in climate and sea levels associated with global warming and ozone depletion. For Nauru, increased temperatures will have devastating effects on its natural ecosystems and affecting particular species in the marine sector. But Nauru biological resources will all be drastically affected by the climate change, climate variability and sea level rise.

6.1.3.7 NON-SUSTAINABLE DEVELOPMENTS

An increase in major developments will also pose a threat to the remaining areas of biological resources if such developments are non-sustainable or not adequately screened of environmental degradations. The Phosphate Mining illustrates the difficulties of balancing conservation and balancing needs on small islands. But with proper environmental scrutiny, many ameliorating activities could have been implemented to lessen the major impacts on the community environment. Furthermore, the recent foreshore construction at Aiwo is another obvious illustration of the problem of inadequate environmental planning considerations.

INTERTIDAL REEF AT ANIBARE WHICH IS HOME TO IMPORTANT REEF RESOURCES FOR THE LOCALS



NAURU FRIGATE BIRDS ARE IMPORANT PART OF NAURU'S CULTURAL SYSTEM DATING BACK TO 1914's



6.2 ENVIRONMENTAL INSTITUTIONS AND LEGISLATIONS

The strengthening of the environmental capacity and the ability to address the main constraints biodiversity conservation and sustainable management of natural resources in Nauru depend to a great extent on the nature of environmental institutions and legislations in the country.

6.2.1 GOVERNMENT MINISTRIES

The Ministry of Commerce, Industries and Environment is the lead agency in the planning and administration of environmental matters in Nauru. It is the ministry directly responsible for energy policies, agriculture, livestock development and tourism, as well as indirectly responsible for the affairs of the Nauru Phosphate Commission. MCIE is responsible for the general planning and development of all new (non-phosphate-related) and alternative industries in Nauru as well as being the ministry responsible for the initial formulation of the Rehabilitation Authority under the Nauru Australian Cooperation Rehabilitation and Development Feasibility Study (NACRDFS).

To strengthen its environmental capabilities, MCIE established an Environment Unit in 1995. The Environment Unit has the responsibility of coordinating environmental management activities in Nauru by both the public and private sectors and is a point of contact for international activities and programmes.

The Nauru Fisheries and Marine Resources Authority (NFMRA)

NFMRA's main objective of responsibilities is to ensure sustainable fisheries so that Nauru fisheries waters are not overfished and that the impact of fisheries upon the environment is reasonable, and seeking to ensure that the impact of other human activities on fisheries is reasonable. NFMRA also protects aquatic food security: to ensure that Nauruans are able to catch or grow sufficient fish to maintain healthy nutrition. NFMRA is also responsible for maximising economic return to Nauru from commercial fishing in the Nauru EEZ. NFMRA is an authority and is has a legislation to guide and enforce the protection of Nauru's marine resources.

The RON Phosphate (RONPHOS)

Ronphos was formerly known as Nauru Phosphate Corporation (NPC) and has basically the same mandate as NPC, which is to mine and market Nauru's phosphate industry as a primary source of revenue for the country. Major notable changes from NPC has been the close linkages and relation with the work of Nauru Rehabilitation in order to mine the area whilst relating with NRC that what has been mined will be rehabilitated back to its natural state.

Nauru Rehabilitation Corporation (NRC)

The Nauru Rehabilitation Corporation was given the responsibility to rehab mined-out areas to a habitable condition. A GIS Mapping system has been organized to identify the areas concerned and their land-use and priority for Nauru. NRC has nurseries for indigenous vegetation for be replanted on the mined out areas.

Development Planning and Policy Division (DPPD)

The division of DPPD has been established under the finance department in order to mainstream and harmonise developmental projects and plans in all sectors of government. DPPD oversees the

implementation of the National Sustainable Development Strategy and works with Aid Management Unit in ensuring that all donor funded projects are part and parcel of the NSDS.

Aid Management Unit (AMU)

Aid Management Unit is the link between bilateral partners and government entities in order to harmonise development projects to ensure that assistance received are not duplicative between sectors.

Non-governmental Organisations

NGO's are a very important part of development in Nauru as most NGO's are comprised of Nauru Island Association of Non Government Organisation (NIANGO), Church Groups, Womens Group, Youth Groups, Life Skills Groups i.e fishing, cultural groups and private sector.

The National Environmental Coordinating Committee

NECC is established in order to mainstream and coordinate all environmental projects and developments as a whole instead of piecemeal, where in the past introduction and implementations of projects are fragmented and overlapping. NECC guides and endorses national environment projects to ensure that they are coordinated and achieved within the allotted duration.

Nauru Community Councils

Nauru community councils have been very active within the last 2 to 3 years as each community groups are representative of all 14 districts. The 14 districts have their own different councils and represent the population of each community. The district councils are very organised and active as important national issues are often encompassed within the 14 councils which include meetings of council leaders to meet and discuss important national issues. Government also utilises the NCC when support from communities is needed.

6.2.2 ENVIRONMENTAL LEGISLATION

Legislation related to environmental issues is found in at least sixteen different Ordinances and Acts. There are also at least fifteen international treaties, agreements and conventions that relate to environmental issues to which the Republic of Nauru is signatory.

6.2.2.1 ORDINANCES AND ACTS

Laws in the Republic of Nauru that pre-date independence (that is, before 1968) were termed “Ordinances”, and remain in force unless and until they are repealed.

The existing Ordinances and Acts that have relevance for addressing environmental issues (listed A-H) are concerned with the conservation of Nauru antiquities, wild bird preservation, public health and sanitation, clearing of leased land and its rehabilitation, marine resource management, important restrictions on certain animal species, and littering

A One of the earliest Ordinances that address (cultural) environmental issues was the *Nauruan Antiquities Ordinance, 1935*, designed to control the preservation and export of:

Nauru relics and curios and articles of ethnological and anthropological interest or value, and articles manufactured . . . according to Nauru methods, and historical remains of any description, and such other articles or things of historical or scientific value or interest and relating to Nauru as may be prescribed.

The current relevance of this Ordinance may be open to question, given the extensive effects of phosphate mining but might be relevant to control the use of Nauru’s genetic resources. Its looked after by the Department of Justice.

B The *Wild Birds Preservation Ordinance, 1937*, prohibits the taking of frigate-birds without permission, effectively provides a year-round closed season for “magpies, snipe, quail, white noddies and **etsirer** (Nauru canary)”, and a closed season from 1 August to 31 October for the black noddies. Enforcement is under the Department of Justice.

C The issue of environmental health is covered by the *Public Health Ordinance, 1925-1967*, as amended. This Ordinance addresses the issues of the prevention of disease and maintenance of health sanitation, control and inspection of food shops, eating houses, barber shops, the slaughtering of animals, and the preparation, sale and distribution of food. The Ministry of Health and Medical Services employs health inspectors to enforce the Act.

D The *Lands Act, 1976* makes provision for “the leasing of land for the purposes of the phosphate industry and other public purposes, and for the removal of trees, crops, soil and sand and the payment of compensation and other moneys”.

Section 8, paragraph 3 states that “The Corporation shall be liable to rehabilitate any land from which phosphate is mined. . . if required by the cabinet by notice in writing to rehabilitate such land”. Compensation is also prescribed when certain culturally important trees and vegetation are removed.

E The *Marine Resources Act, 1978* is designed to regulate the fishing industry, both inshore and within the 200-mile Exclusive Economic Zone (EEZ). Its reviewed regulation now prohibits some fishing methods such as spearfishing and driftnet fishing, the use of scuba and the taking of marine mammals. The regulation also stipulates minimum sizes for rock lobster and octopus, minimum length for turban shells, bluetail mullet, topsail drummer and rainbow runner, and minimum size for the coconut crab.

- F** *Animals Act, 1982* regulates the licensing of dogs, destruction of dangerous or diseased dogs. Cabinet may prohibit the importation of animals of any species. These prohibitions are regarded as important both for quarantine reasons and for the protection of indigenous wildlife. Enforcement is by the Customs and Immigration and the Police departments.
- G** The *Litter Prohibition Act, 1983* allows for fines of up to \$300 for the offence of littering. This Act is comprehensive in its description of littering, but enforcement by the Police Department appears to be non-existent.
- H** Other related environmental legislations include:
- 1) *Aerodrome(Acquisition of Land)Ordinance*
 - 2) *Clearing of Lands Amendment Ordinance*
 - 3) *Dog Importation Prohibition Ordinance*
 - 4) *Nauru Royalties Trust Ordinance*
 - 5) *Nauru Phosphate Agreement Ordinance*
 - 6) *Roads Maintenance Ordinance*
 - 7) *Sale and Purchase of Copra Ordinance*
 - 8) *Salvage of Derelict Wreck Act*
 - 9) *Sanitation Inspectors Ordinance*

6.2.2.2 INTERNATIONAL CONVENTIONS & TREATIES

Nauru is a signatory to a number of international conventions and treaties related to environmental issues of international concern. These include:

- 1) *The International Plant Protection Convention, 1951*
- 2) *Treaty on the Non-Proliferation of Nuclear Weapons, 1970*
- 3) *Convention on the Prevention of Marine Pollution by dumping of Waste and other Matter, 1972*
- 4) *South Pacific Forum Fisheries Agency Convention, 1979*
- 5) *United Nations Convention on the Law of the Sea, 1982*
- 6) *Convention for the Protection of the Ozone Layer, 1985*
- 7) *South Pacific Nuclear Free Zone Treaty, 1985*
- 8) *Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, 1987*
Protocol for the Prevention of Pollution of the South Pacific Region by Dumping, 1986
Protocol Concerning Cooperation in Combating Pollution Emergencies in the South Pacific Region, 1987
- 9) *Convention for the Prohibition of Fishing and Long Driftnets in the South Pacific, 1989*
- 10) *United Nations Framework Convention on Climate Change, 1992*
- 11) *Convention on Conservation of Biological Diversity, 1992*

12) *Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region, 1995*

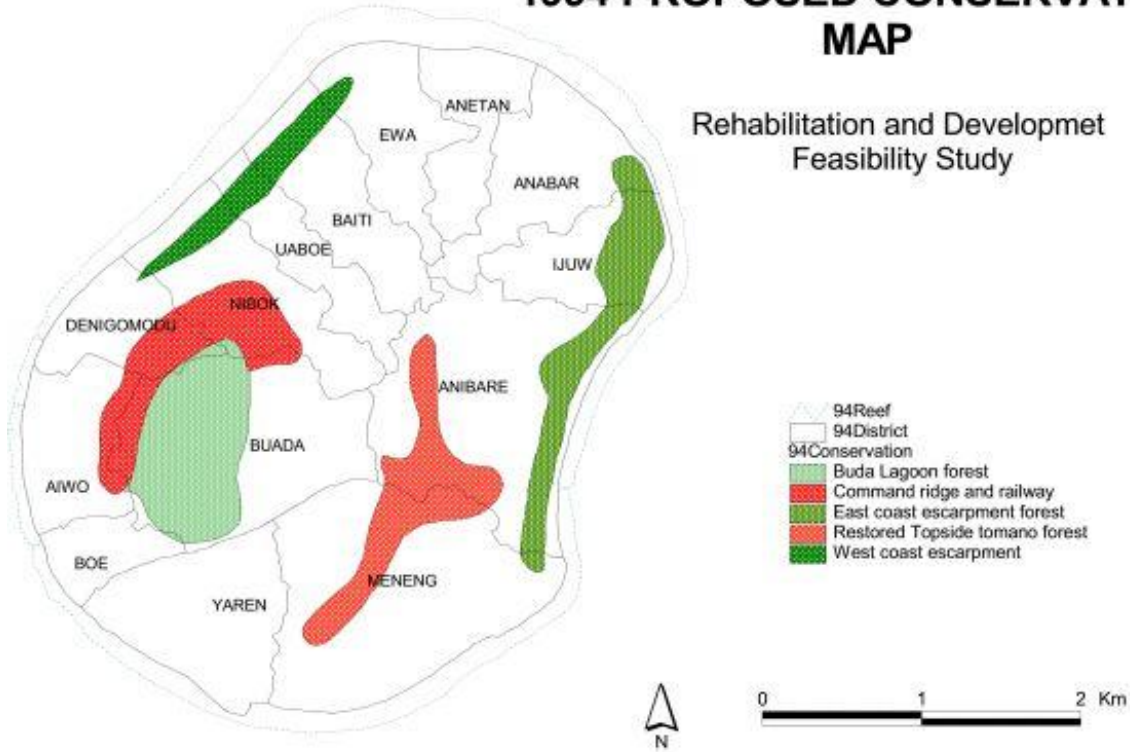
The active position that Nauru has adopted with respect to these issues signifies the Government of Nauru's philosophy towards, and interest in, the protection of the global and Pacific environments for the benefit of future generations.

On the home front, this interest is also reflected in the commitment of the Government of Nauru to the recommendations of the Nauru Australia Cooperation Rehabilitation and Development Feasibility Study (NACRDFS) report which has formed the basis of the current Nauru National Biodiversity Strategic Action Plan.

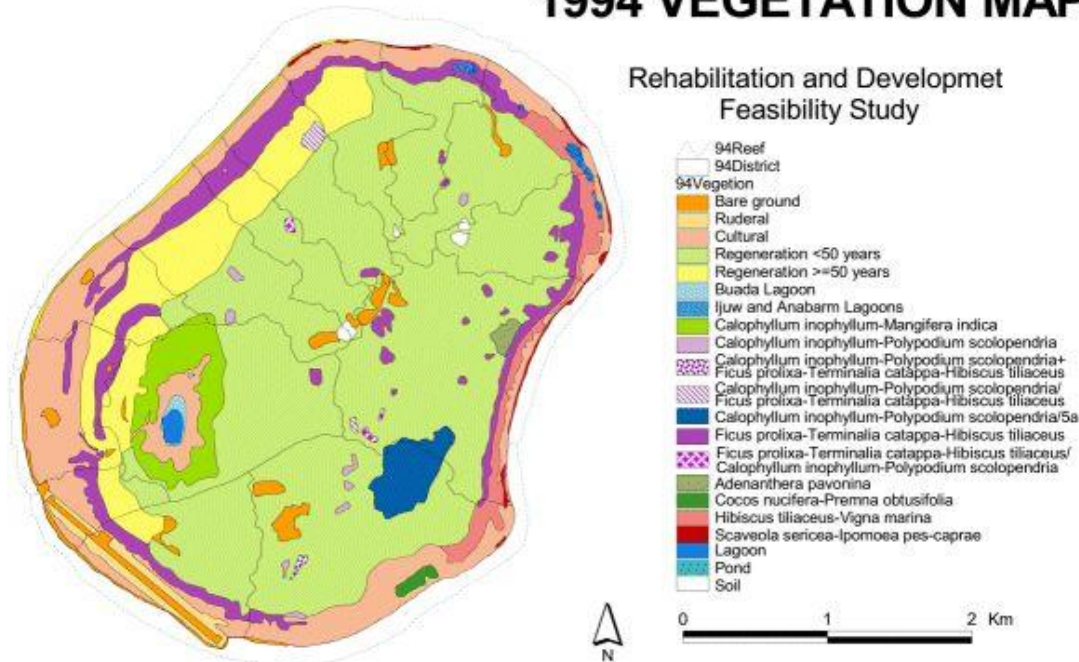


The Nauru and Australia Rehabilitation and Development Feasibility Study (NARDFS) produced the following maps in 1994 and they are currently being updated and should be available in late 2010.

1994 PROPOSED CONSERVATION MAP



1994 VEGETATION MAP



6.3 REFERENCES

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