

Land Use Policy for the Cook Islands

Prepared for
The Government of the Cook Islands
and the Land Resources Division,
Secretariat of the Pacific Community

by

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1 **Background**

1.1 **Introduction**

Land use planning processes enable governments to direct desired outcomes and protect people and the nation from undesirable outcomes. For example, landscape, cultural and biodiversity information can be used to identify which areas are most appropriate for conservation, which areas are most prone to soil erosion, and other similar problems. Similarly the process can be used to determine which areas are most suited for agriculture, tourist development, and urban and industrial development. While land use policies state the intent, the preferred uses are best expressed as delineations on land zoning maps.

Land use planning is also a useful vehicle for coordinating the roles of different government departments. Land use planning forces consideration of all political trade-offs simultaneously and helps to maximise opportunities for sustainable development.

Any proposed land zoning plan and matching land use policy is likely to be more acceptable and implementable if all resource owners and all levels of the political hierarchy have had an opportunity to participate in the planning process.

The National Land Use Policy and subsequent administrative decisions create precedents for a different way to administer natural resources and realise sustainable development. In particular, decision-making responsibilities will be shared in new ways that give a more appropriate balance between top-down and bottom-up processes.

Land owner needs and local development requirements are often most efficiently recognised by communities.

Solutions emphasise devolution of some responsibility to Districts and Island Councils and greater involvement of NGOs and local people.

Sustainable development cannot be achieved through the efforts of a single department or organisation. It requires an integrated effort by all relevant departments, NGOs, industry and the community at large.

A bottom-up approach facilitates greater community involvement and acceptance as well as faster implementation of programmes and policies. This approach also recognises greater community responsibility for resource management and enables local knowledge to be applied.

The Land Use Policy document has deliberately been kept brief. It provides a set of indicators which can be used to assess whether development is in line with sustainability. The indicators are not fully comprehensive and can be added to on the basis of Cook Islander practical experience and greater expertise.

1.2 **Need for a Land Use Policy**

A sound land use policy should put emphasis on the need for sustainable development in the absence of any degradation of the cultural, economic and physical environment. This Land Use Policy document is designed to complement the *Environment Act 2002*, the National Environment Strategic Action Framework and the Policies relating to Sloping and, Wetlands and the foreshore.

Why a Land Use Policy for the Cook Islands? There are three purposes for a policy:

- (i) An effective national land use policy is equally dependent on informed public opinion as it is on legislation or actions by interest groups. If the principles and thinking underlying

such a policy are well known, discussed and understood then implementation of the policy is greatly enhanced. Thus, policy can be a powerful educational tool.

- (ii) A policy offers long-term continuity and a framework for national planning and harmonising with government and public interests. Thus, policy can fulfil a role in setting standards and again an informed public has an important role.
- (iii) Management decisions are constantly being made, some minor, others having policy implications. Government departments will find it easier to exercise wise judgement if there is a precisely written and clearly understood land use policy to serve as a guide. Thus, policy can provide a framework to manage change.

An educational tool, a standard and a guide – these are the three most important functions fulfilled by a formally adopted policy.

The document focuses on the definition of indicators for sustainable progress and emphasises the need for development that promotes economically, ecologically and socially sustainable land use.

1.3 Constraints to Achieving Sustainable Development

There are two ways to look at constraints to sustainable development. The first way is the approach of the bottom-up process characterised by extensive community involvement in decision making. The other approach takes a top-down view and recognised the role of government in facilitating structural change and the promotion of development.

Recognising these two routes for decision making, the following are some constraints for sustainable development in the Cook Islands:

- Conflicting institutional objectives of relevant departments, NGOs and community groups;
- Lack of awareness, knowledge and understanding among land owners of the real costs of unsustainable development;
- Inconsistencies between legislation, policies and environmental management plans;
- There is a lack of data about and understanding of natural resources and ecosystems;
- Lack of trained personnel and resources to carry out the essential tasks of project design, data generation, evaluation and monitoring projects; and
- Inappropriate advice from experts who have not appreciated aspects of the Cook Islands social, cultural and political realities, especially those that relate to resource use and land ownership.

1.4 Overview of Land Use Issues (ADB, 2006)

The Cook Islands is similar to other Pacific Island countries where land is limited and economic development has increased pressure on the environment and natural resources. The islands are predominantly coastal entities and because of their size and isolation, and the fragile nature of island ecosystems, the biological diversity is among the most threatened in the world.

Over the years, improper and largely uncontrolled development has occurred in environmentally sensitive areas such as wetlands, sloping lands and the foreshore, which is now resulting in increased incidents of human health impacts and stress to natural ecosystems. There is concern about the increasing risks of land degradation as a result of unchecked development such as landfills. Increasing soil erosion is evident, especially around the foreshore and slopes. In recent years, 31% of developments on Rarotonga have been concentrated around the

foreshore and 36% on sloping lands. Twenty-one percent (21%) of development applications under the *Environment Act 2003* required environmental impact assessment. One in three public complaints received by the Environment Service involved illegal developments.

There is increasing impact from growing numbers of resorts and household buildings that have been and continue to be constructed along the foreshore for tourism and tourism-related activities. These account for 63.8% of foreshore problems including 13% instances of erosion damage to properties and beaches as a result of landowners making major alterations to foreshore areas. Community concerns have also been raised about loss of public access roads and pathways to the beaches as a result of foreshore development, which highlights the growing tension relating to the land tenure system and the distribution of benefits from land-related developments.

The ecological and economic risks posed by lagoon pollution, beach degradation and the island's high vulnerability to extreme weather and climate events highlights the need for better monitoring and management of current developments. The stresses and impacts from largely uncontrolled development are not limited to Rarotonga. Unchecked tourism development on Aitutaki highlights deficiencies nationally in the compliance and enforcement of the building code, health regulations regarding septic tanks, and the enforcement of the *Environment Act 2003* in the outer islands.

All land is customary or native land and the Land Court and the Leases Approval Committee are the sole adjudicators for administering the complex land tenure system and must take cognizance of the intricate weave of custom law and practice in relation to land on the majority of islands.

Given the increasing development pressure and tourism growth on the Southern Group, land is becoming a more valuable commodity in the Cook Islands. In addition there is no land use planning or zoning policies established which causes confusion regarding the use of land for residential, commercial, industrial and agricultural purposes as well as national parks and reserve. Extensive ribbon development along the coastal strip of Rarotonga continues and is making the island less attractive for tourists and locals.

This section has been compiled from the Asian Development Bank technical assistance project report entitled "Legal and Institutional Strengthening of Environmental Management in the Cook Islands" (ADB TA 4273-COO).

2 National Sustainable Development Plan 2007-2010

2.1 Living the Cook Islands Vision – a 2020 Challenge

The Cook Islands National Vision embodies the aspirations of the people. This is the vision that the Cook Islands strive for in the “Te Kaveinga Nui”. The National Vision is expressed in Maori (and thereafter in English) in this way:

“Te oraanga tu rangatira kia tau ki te anoano o te iti tangata, e kia tau ki ta tatou peu maori e te aotini toporoporoia o te basilei.”

(To enjoy the highest quality of life consistent with the aspirations of our people, and in harmony with our culture and environment.)

This 15 year visionary framework asserts the strategic outcomes (see Box 1) that the Cook Islands hope to accomplish during the process of Te Kaveinga Nui.

“The strategic outcomes highlight the need to address the Cook Islands human resource development needs; the improvement of the social sector with particular attention to health and education services; enhancing law and order and good governance; strengthening the national economy; developing effective foreign affairs; while at the same time supporting our cultural values and ensuring that future generations have the opportunity to enjoy our natural environment.”

Box 1 The Five Strategic Outcomes

1. Well educated, healthy and productive people and resilient communities.
2. A secure society built on law and order, and good governance.
3. Sustainable economic growth in harmony with our social values, culture and environment.
4. Responsible and mature foreign relations with New Zealand and other regional and international communities in the interests of the people of the Cook Islands.
5. Enhanced cultural and environmental values.

Source: Cook Islands National Sustainable Development Plan 2007-2010.

2.2 Objective Strategic Goals

The philosophy underlying development of the Cook Islands is established in 2007-2010 National Sustainable Development Plan (NSDP) which contains Eight Strategic Goals (see Box 2).

The objective of the NSDP is “to build a sustainable future that meets our economic and social needs without compromising prudent economic management, environmental integrity, social stability, and our Cook Island Maori culture, and the needs of future generations.”

Policies that may emanate from the land use policy planning process must be compatible with the above, especially with the fourth strategic goal. To achieve this and related goals, those

who manage and utilise natural resources and the underlying ecosystems need to agree on forms of resource use and management that are likely to be sustainable over the long term.

Box 2 The Eight Strategic Goals

To achieve the NSDP objective, eight (8) strategic goals are identified below.

1. Equal opportunities for education, health and other social services towards maintaining an inclusive, vibrant, resilient and productive society in harmony with our culture (**Strategic Outcomes 1 and 5**).
2. A society built on law and order and good governance at all levels (**Strategic Outcomes 2 and 3**).
3. Innovative and well-managed private sector-led economy (**Strategic Outcomes 1 and 3**).
4. Sustainable use and management of our environment and natural resources (**Strategic Outcomes 1 and 5**).
5. A strong basic infrastructure base to support national development (**Strategic Outcomes 1 and 3**).
6. A safe, secure and resilient community (**Strategic Outcomes 1, 2, 3 and 5**).
7. A foreign affairs policy that meets the needs and aspirations of the Cook Islands people (**Strategic Outcomes 4, 1, 2, 3 and 5**).
8. Strengthen National Coordination and Institutional Support Systems for Development Planning, Evaluation and Monitoring (**Strategic Outcomes 1, 2, 3, 4 and 5**).

Source: Cook Islands National Sustainable Development Plan 2007-2010.

2.3 Challenges Identified in the NSDP 2007-2010

The following challenges identified in the Cook Island NSDP are deemed to have relevance to the land use planning process:

- Continuing decline in the national population especially in the outer islands.
- Low representation of women in politics, high level decision making positions, policy making and other leadership roles.
- Agencies and governing institutions involved in outer island administration lack coordination.
- Limited population base and increasing reliance on foreign workers.
- Limited skilled workers in technical and specialised fields.
- Heavy reliance on tourism sector.
- Land tenure problems.
- Community acceptance and support for the need for resource management.

- Reduced land availability on Rarotonga and lack of agricultural infrastructure in the outer islands to improve agric. production levels.
- Increased reliance on agric. imports as agric. & livestock production levels decline nationwide.
- Weak land use policies.
- Limited promotion of conservation of biodiversity and natural resources on all islands.
- Increased risk of introduction and establishment of foreign plant and animal pests and diseases.
- Lack of coordinated inter-sectoral management of natural resources and environmental programmes.
- Impact of waste and manmade pollutants on the environment.
- Weak structural and organisational capacities and capabilities amongst key agencies managing our natural resources.
- Resource services and availability constraints such as water, construction aggregates, etc.
- Reliance on imported fossil fuel.
- Increasing prices of fossil fuel.
- Identifying economically viable renewable energy options and decreasing consumption of non-renewable energy.
- Resourcing and strengthening the national institutional capacity for coordinated disaster risk management.
- Maintenance and strengthening of existing and future international relationships.
- Proactive interaction and more effective engagement with CROP agencies.
- No CPO to coordinate national development planning activities.
- Weak institutional arrangements and capacities for sectoral and national policy, planning development and coordination.
- Lack of quantitative, sectoral and gender based baseline data.
- Lack of robust data systems, networking systems and data collation.

Source: Cook Islands National Sustainable Development Plan 2007-2010.

3 Analysis of Environmental Issues

3.1 The Current State of the Land

Land use issues vary depending upon which part of the Cook Islands one lives in. Many issues will be local in their effect and relatively easy to deal with. Others will have a significant impact remote from the site at which they occur. Cumulatively, impacts and effects may be of either island or national significance. A preliminary analysis of the major issues are summarised in Figures 1 and 2.

3.2 A Checklist Summary of Significant Environmental Issues for the Cook Islands

3.2.1 Background setting for land use analysis and policy development

A fragile physical environment characterises the Cook Islands. The nation is exposed to frequent cyclones with the devastations resulting from such storms have, at times, been catastrophic. Agriculture, fisheries and tourism remain the mainstay of the economy. These sectors provide the livelihood for most Cook Islanders, particularly for Aitutaki and Rarotonga.

Domestic markets are relatively small, reflecting small populations. They are also highly fragmented, since island settlements are separated by large expanses of sea. External markets are remote. This, together with low volumes of production, results in high unit costs for transportation and marketing. The population structure is young; as a result, entries into the labour force are well in excess of the job opportunities. Skills are in short supply at all levels. The role of the public sector in the economy is pervasive and dominant. The public sector is the largest employer.

Private sector could play a much enhanced role in the achievement of the ambitious objectives outlined in development plans.

3.2.2 A checklist of environmental issues

1. *Considered a significant issue with current or threatened impacts:*

- **Land** (includes availability, reclamation, land use controls, and rural degradation);
- **Water** (includes rainwater storage/water conservation, groundwater pollution/contamination);
- **Soil erosion;**
- **Biodiversity** (includes loss of species/ecosystems, protected area/gene pool establishment);
- **Coastal development** (includes coastal erosion/degradation, beach sand mining, marine pollution – reef and lagoon);
- **Urban industrial development** (includes solid waste management, sewage and refuse disposal, liquid waste management, urban planning and development, tourist facility development);
- **Agriculture** (includes agricultural practices, agricultural intensification, e.g. chemicals);

- **Fishing** (includes inshore and lagoon overfishing, destructive fishing techniques);
- **Energy** (includes alternative energy need, fuel wood shortage);
- **Legislation** (loss of traditional controls on resource use).

2. Not indicated as an issue or not considered significant:

- **People** (includes population growth, population density of urban centres, internal migration rate to urban centres);
- **Mining waste disposal;**
- **Forestry** (deforestation);
- **Fishing** (overfishing offshore).

3.3 Legal and Institutional Responsibilities

The *Land Use Act 1969* lies dormant and has never been enforced. The responsibilities for land use planning are therefore shared by several authorities, including the Central Government exercising its powers under the 1915 *Cook Islands Act*, the Ministry of Works as caretaker of infrastructure, survey and maps, and the Land Court Division of the High Court. There is no specific department dealing with land use planning and there are no known national land use planning policies.

The *Environment Act 2003* recognises the uniqueness of each island's traditions and traditional resource management practices. The *Environment Act 2003* is now effective for the islands of Rarotonga, Aitutaki, Atiu and Mitiaro. The Act now requires all development activities to first receive consent from the National Environment Service who will determine whether the development or activity causes or is likely to cause significant environmental impacts. Conditions can be imposed on any approval granted under the *Environment Act 2003*.

A summary of the relevant legal and institutional framework relating to land use and physical planning (ADB, 2006) are as follows:

- **Ministry of Works (MoW)**
 - Legal Status: Set up as the Ministry of Supportive Services under the Act of Parliament in 1994. Established under the Public Service Order 2000 as well as the Rarotonga Island Council Empowering Ordinance 1959.
 - Management Framework: Implementing Agency to oversee engineering and construction of physical works including roads, waste management and landfills. MoW undertakes all the management and development of water resources and water supply on Rarotonga. The Urban and Rural Planning Division has responsibility for land resources planning and management in the Cook Islands.
 - Current Status: Clearly established service and delivery role in the construction of infrastructure.
- **National Environment Service (NES)**
 - Legal Status: Established under the Cook Islands *Environment Act 2003*.
 - Management Issue project permit and EIA for projects and activities in sensitive

- Framework: areas (foreshore, wetlands, sloping lands). Monitor implementation and confirm compliance.
- Current Status: Permitting authority under Part 8 of the *National Environment Act* dealing with “Specific Areas of Concern” and addressing protection of foreshore, inland and Cook Islands waters. The permitting authority may require or take remedial action.
- **Ministry of Agriculture (MoA)**
 - Legal Status: *Ministry of Agriculture Act 1978*.
 - Management Framework: Principal aim of the MoA is to maximise exploitation of the potential in agriculture.
 - Current Status: Absence of a land use policy and planning coupled with a complicated land ownership system and the inability of government to enforce existing land laws has led to progressive encroachment into agricultural land and increasing soil infertility.
 - **Disaster Management Office (DMO)**
 - Legal Status: *Hurricane Safety Act (1973)*.
 - Management Framework: Chief Hurricane Safety Officer, and Hurricane Safety Committee.
 - Current Status: Institutional strengthening of disaster management framework undertaken with assistance of the ADB. National Plan for Disaster Preparedness developed to reduce risk to vulnerable infrastructure and services from climate change.

Figure 1 Predominant adverse environmental effects of land use

Process	On-site to Off-site		Reversible to Irreversible		
	On-site	Off-site	Reversible	Reversible within limits	Substantially irreversible
Soil Erosion - sheet, wind - landslides - debris flow, creep	✓ ✓ ✓	✓ ✓		✓	✓ ✓ ✓
Soil structure decline Soil compaction	✓ ✓		✓ ✓		
Soil nutrient decline Soil organic matter decline	✓ ✓			✓ ✓	
Chemical residue in soil	✓				✓
Pests Weeds	✓ ✓	✓		✓ ✓	✓ ✓
Sediment to water - streams - coastal zone - lagoons		✓ ✓ ✓	✓		✓ ✓ ✓
Contaminants* to surface water - streams - coastal zone - lagoons		✓ ✓ ✓	✓	✓ ✓	✓
Contaminants* to groundwater		✓			✓
Faecal contamination to water		✓	✓		
<p>* Includes nutrients, pesticide residues or heavy metals</p> <p>On-site to off-site</p> <ul style="list-style-type: none"> Some adverse effects impact largely on-site while for others the impact is remote, or off-site from the land use activity. In some cases both on-site and off-site effects result. <p>Reversible to irreversible</p> <ul style="list-style-type: none"> Some adverse effects are reversible and readily rectified, while others are all for practical purposes, irreversible. Some effects are reversible within limits, that is, reversible within a particular threshold, but for all practical purposes are irreversible beyond that threshold. Such thresholds may not be readily identifiable. 					

Figure 2 Incidence of Adverse Environmental Effects of Land Use in the Cook Islands

	Aitutaki	Atiu	Mangaia	Manihiki	Manuae	Mauke	Mitiaro	Nassau	Palmerston	Penhryn	Pukapuka	Ralagamga	Raroptmga	Suwarra	Talitea
Soil erosion															
- sheet, wind	1	2	2	-	-	2	-	-	-	-	-	-	1	-	-
- landslides	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-
- Debris flow, creep	1	1	1	-	-	1	-	-	-	-	-	-	2	-	-
Soil structure decline	1	2	2	-	-	2	-	-	-	-	-	-	-	-	-
Soil compaction	1	1	1	-	-	1	-	-	-	-	-	-	1	-	-
Soil nutrient decline	1	2	2	1	1	2	1	-	1	1	1	1	1	-	-
Soil organic matter decline	1	1	1	-	-	1	-	-	-	-	-	-	1	-	-
Chemical residue in soils	2	1	1	-	-	1	-	-	-	-	-	-	2	-	-
Pests	2	1	1	1	1	1	1	-	-	-	1	1	2	-	-
Weeds	1	1	1	-	-	1	-	-	-	-	-	-	2	-	-
Sediment to water	1	1	1	-	-	1	-	-	-	-	-	-	2	-	-
- streams	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-
- coastal zone															
- lagoons	1	1	1	1	-	1	-	-	-	-	-	-	2	-	-
Contaminants* to surface water	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-
- streams	1	-	-	-	1	-	-	-	-	1	1	1	2	-	-
- coastal zone															
- lagoons	1	1	1	1	1	1	-	-	-	1	1	1	1	-	-
Contaminants* to groundwater	1	1	1	1	1	1	1	-	1	1	1	1	2	-	-
Faecal contamination to water															

* Includes nutrients, pesticide residues or heavy metal.

Key: - Not significant
 1 Significant with low impact 2 Significant with moderate impact 3 Significant with severe impact

4 Land Use Foresight and Guiding Principles

4.1 Land Use Foresight

By the year 2020 the following should be achieved:

- The overall community awareness and understanding of the environment increased through education, training and information dissemination;
- Biological diversity conserved and endangered wildlife managed;
- Environmental considerations integrated with economic and sectoral planning;
- Planning and management for the multiple-use, ecologically sustainable development and conservation of coastal and land areas, habitats, and natural resources;
- Retention of traditional knowledge and practices in the promotion of sustainable agriculture and rural development;
- Measures developed to combat deforestation;
- Protect and improve the Cook Islands environment and the management of natural resources for the benefit of present and future generations;
- Protection of the quality and supply to ensure the sustainable use and conservation of fresh water;
- Measures adopted that enable the Cook Islands to cope effectively, creatively and sustainably with climate change and rising sea levels;
- Data related to environmental policy, management and planning needs and decision making for sustainable development available and disseminated;
- Strengthened national capabilities, institutional arrangements, and financial support to plan and manage sustainable development;
- Affordable and appropriate environmentally sound technologies transferred, along with the associated development of human resources, skills and training, research and information sharing;
- Participation of communities in the planning and management of programmes for sustainable resource conservation and use;
- Individuals and NGOs have access to all available information, are informed about environmental issues relevant to them, and participate in the formulation and implementation of decisions likely to impact on their environment;
- Economic development activities are carried out in an environmentally sound and sustainable manner;
- Economic development activities are carried out in an environmentally sound and sustainable manner;
- Effective participation with international and regional protocols and programmes for which the Cook Islands is a signatory.

4.2 Policy Principles

The following principles are the basis of the land use policies. The criteria reflect values and help to establish priorities for land use in the Cook Islands:

- Protection of natural resources, agricultural lands and environmental quality is important in the Cook Islands;
- The Cook Islands affirms a continuation of delivering quality rural services in agricultural areas and to the outer islands.
- The Cook Islands recognises existing land zoning and the associated rights of land owners;
- Efficiency, cost effectiveness, public safety and equity are important factors in the provision of services;
- Communication and mutual understanding among the individual islands (Island Councils and communities) is critical in the development of the Cook Islands land use patterns;
- Agriculture remains a valuable industry in the Cook Islands.

4.3 Use of Land Use Policies

Rezoning and land use proposals should be evaluated for conformance with the adopted policies of this plan. Ideally, all applicable policies would be met.

4.4 Relationships between Land Use Policy and Rarotonga Land Zoning map

Land zones and the criteria defined for each on the Rarotonga zoning map are essentially general development policies and these can be grouped into five (5) categories: Environmental, Agricultural/Rural, Residential, Economic Development, and Open Space, Sacred Sites and Places of Cultural Significance. They underpin the purpose of the zones differentiated.

1. Environmental

- Protect the environmental quality and natural resources of the Cook Islands, such areas of indigenous forest, by reducing burning and indiscriminate clearing and destruction of natural habitat for wildlife and plants;
- Preserve significant features, such as mountainous uplands, wetlands, coastlines, environmental sensitive areas, and prime agricultural land;
- Protect waterways, riparian zones, and other highly erosive lands;
- Protect water quality;
- Protect sacred areas and sites of cultural significance;
- Preserve and protect historical and architecturally significant buildings.

2. Agricultural/Rural

- Preserve agricultural land;
- Protect agricultural activities from urban encroachment;
- Support the rural lifestyle and the quality of life associated with agriculture.

3. Residential

- Consider appropriately located residential development where disturbance to natural land features, such as steep slopes, floodplains, indigenous forests, wildlife habitats, wetlands and coastal zones.
- Discourage proposals for residential rezoning for non-farm developments in areas essentially agricultural in character.
- Foster orderly and efficient residential growth.

4. Economic Development

- Provide land uses that support economic development in the Cook Islands.
- Encourage commercial and industrial development where disturbance to productive agricultural land and natural land features is minimal.
- Encourage commercial uses and industry to locate where services are available to handle environmental, waste water, solid waste and transportation concerns.
- Work with government agencies, Island Councils, Office of the Minister for Island Administration, and private sector to promote economic development.

5. Open Space, Sacred Sites and Places of Cultural Significance

- Meet the recreational needs of the people through maintenance and enhancement of parks and open spaces.
- Encourage development of a managed web of trails to iconic features within the interior of Rarotonga and where appropriate in the outer island.
- Identify, restore and protect places of cultural significance and sacred sites.

5 Proposed National Land Use Policies

1. *Education and public awareness that:*

- (a) *Land, water and biota are interdependent and must be sustainably managed, and*
- (b) *The land owners and the communities have responsibility for sustainable land management.*

Indicators of progress towards improved education and public awareness include:

- Programmes conducted to enhance public awareness about sustainable land management; programmes available for the Northern and Southern Groups;
- Community and land owner involvement in planning and implementing sustainable land use practice programmes;
- Skills, knowledge and understanding of sustainable land use significantly enhanced amongst land owners;
- Significant increase in the number of tertiary qualified graduates;
- Emphasis on the necessary conditions for sustainable land use and the environment in extension and training courses;
- Increased numbers of adequately trained advisory and extension officers;
- Inclusion of sustainable development and environmental concepts in primary and secondary curriculum; and
- Key information materials published and disseminated in English and Maori.

Main authorities responsible: Min. of Education, MFEM, OMIA, Min. of works.

Other collaborating agencies: Island Councils, National Environmental Services, Min. of Agriculture, House of Ariki, Koutu Nui.

2. *Increased public awareness of the values of forests and biodiversity*

Indicators likely to enhance greater public awareness include:

- Community groups are active in the planning and management of indigenous and exotic forestry activities;
- Effective liaison between NGOs and government agencies;
- Increased interest and commitment to community forestry and forest rehabilitation;
- Strategic guidelines for public access into the indigenous forests developed in consultation with land owners, affected communities and ecotourism developers;
- Effective dissemination of the results of forest, biodiversity and ecological research;
- Benefits of planting trees, afforestation and agroforestry systems particularly on degraded soils, fernlands, etc. promoted.

Main authorities responsible: National Environmental Services.

Other collaborating agencies: CIANGO, OMIA, Island Councils, Min. of Agriculture.

3. *An integrated land use planning framework for the protection and sustainable development and management of natural resources that recognises:*

3. (a) *The indigenous forests will be protected and managed for their biodiversity and conservation values.*

Indicators of programmes likely to promote biodiversity and conservation include:

- Current legislation related to biodiversity/conservation, protected areas and threatened species and natural resource management reviewed;
- National Environment Strategic Action Framework (NESAF) developed and implemented, including on the majority of the outer islands;
- Policies adopted to identify, protect and manage representative habitats of Cook Islands biota;
- Educational programmes developed by government to support restoration of degraded indigenous forests;
- Strategy developed as to how exotic forest species plantings can be managed, particularly their role as a nursery canopy for restoration of indigenous species;
- National strategy defining goals for the maintenance of biodiversity established as the initial step in implementing the International Convention for Conservation and Biodiversity (ICBD).

Main authorities responsible: National Environmental Services, Min. of Agriculture

Other collaborating agencies: CIANGO, OMIA, Island Councils.

3. (b) *The integrated land use planning processes need to outline strategies for sustainable land management.*

Indicators of progress towards more effective sustainable land management include:

- Processes in place to encourage consultation amongst government agencies on sustainable land management issues;
- Procedures established by government to ensure community participation in the planning process and in decision-making that effects sustainable land management;
- Land use legislation and land zoning policies reviewed and reformed;
- Existence of island specific land zoning maps and land use plans;
- Establishment of an interdepartmental land use planning group;
- A convergence between national strategic goals and current land use practice;
- The existence of a land use suitability classification system;

- Regulations that preclude extractive forms of land use in specified areas; and
- Existence of an appeal system that enables individuals and communities to oppose development that is inconsistent with local zoning plans.

Main authorities responsible: Min. of Works

Other collaborating agencies: Min. of Agriculture, National Environmental Services, OMIA, Island Councils, House of Ariki.

3. (c) Sound land use practices enhance soil, water and overall environmental values

Indicators of land use planning practices likely to promote sustainable resource use and investment include:

- Agriculture sector reviewed;
- National Agricultural and Livestock Development Strategy prepared;
- Integrated agricultural planning and production systems developed;
- Improved farming practices and sustainable farming systems see increased productivity from the land;
- Demonstration sites and farms established to promote improved cropping and farming systems;
- Agro-business innovations coupled with improved farming systems have enhanced the socio-economic wellbeing of communities, particularly for the outer islands;
- The principles of sustainable rural development and land management promoted nationally;
- Catchment-based community land use planning groups established and are provided the technical resources and information to develop integrated catchment management plans;
- Landcare groups established to address environmental issues pertinent to their respective communities; government provide support to these initiatives;
- Coordination processes are established to ensure land use policy, relevant programmes and obligations to the international protocols are synchronised and implemented; and
- Relevant government agencies appreciate the interdependence of land use practice and integrated catchment management.

Main authorities responsible: Min. of Agriculture

Other collaborating agencies: Min. of Works, National Environmental Services, Min. of Foreign Affairs, House of Ariki.

4. Coordination and processes to protect agricultural systems and forests from weeds, pests and pathogens

Indicators of progress towards strengthening biosecurity:

- National coordination of quarantine and extension services for the management and control of weeds, pests and pathogens affecting crops and forests;
- Review of current biosecurity policies and quarantine services conducted;
- A National Biosecurity Strategy developed and implemented;
- Resources provided for research and extension into integrated pest management and biological control;
- Biosecurity protocols strengthened with Australia, New Zealand and the SPC;
- Strengthened collaboration with regional and international programmes.

Main authorities responsible: Min. of Agriculture

Other collaborating agencies: Min. of Justice, Min. of Foreign Affairs, National Environmental Services, CIANGO.

5. Protection of soil and water values

Indicators of progress towards enhanced protection of soil and water values include:

- Spatial extent of land degradation, erosion, forest removable measured and documented;
- Nature and extent of land management problems assessed and mitigation measures determined;
- National land use survey undertaken, data entered into GIS and analysis conducted to determine trends, particularly for Rarotonga;
- Biophysical and associated data in a national operational GIS/LIS generating spatial outputs in support of land zoning, land use planning, crop suitability, etc.;
- Practical (on-farm) approaches for biological and/or mechanical control of erosion and amelioration of contaminated soils;
- Integrated Water Resources Management Policy developed and implemented;
- National Water Authority established;
- Recommendations embodied in the Pacific Regional Sustainable Water Management framework applied in the main outer islands;
- Resources provide for effective water harvesting and management;
- Integrated Catchment Management (ICM) plans prepared in key catchments to improve water quality and quantity in degraded watersheds;
- Guidelines and standards prepared to maintain the biophysical minimum requirements for water quality;
- Guidelines developed for the design, location, etc. for environmentally acceptable non-polluting piggeries;
- Sustainable ecosystem management of inshore fisheries, and increased community management of the resource;

- Inshore fisheries based policy and legislation developed and implemented;
- The area of well managed community based Raui initiatives increased;
- Measures to predict risk, prevent and remedy impacts of natural hazards, i.e. sea surges/tsunamis, coastal erosion, flooding and erosion;
- Regulations related to the disposal of liquid and solid wastes into waterways and lagoons is being strictly enforced.

Main authorities responsible: Min. of Agriculture

Other collaborating agencies: Min. of Works, Min, Marine Resources, Min, of Health, Min. of Justice, Min. of Foreign Affairs, National Environmental Services, CIANGO.

6. Sustainable use and management of the environment including improved infrastructure in support of national development

6. (a) Improve management of solid, liquid and other forms of waste, minimising the human health effects and impacts on the environment.

Indicators of progress towards improved management of wastes include:

- Solid waste management plan that strengthens infrastructure and enhances institutional capacity to manage implemented;
- Private sector active in increasing recycling and reducing residual solid wastes; and
- Integrated liquid waste management policy reduces water borne diseases and environmental costs.

Main authorities responsible: Min. of Works

Other collaborating agencies: Min. of Health, National Environmental Services, CIANGO.

6. (b) Rationalise the planning and management in the energy sector for all islands.

Indicators of progress toward rationalisation in the energy sector:

- Priorities related to energy in the Preventative Infrastructure Master Plan implemented;
- Strategies outlined in the Framework for Regional Action on Climate Change, Climate Variability and Sea Level Rise, 2006-2015 implemented:
 - energy consumption decreases due to increased efficiencies in energy use,
 - reduction in the reliance on high GHG based fossil fuel through adopting viable alternatives, and
 - significant increase in the use of renewable energy.

Main authorities responsible: Energy Division

Other collaborating agencies: Min. of Justice, Min. of Foreign Affairs, OMIA, Island Councils, National Environment Services.

7. *Natural hazard reduction and effective disaster management system with a national strategy for climate change*

Indicators of progress towards improved natural hazard risk management and planning for climate change include:

- Priorities of disaster risk reduction and disaster management identified that will strengthen the National Sustainable Development Strategy (NSDS);
- Development of a Disaster Risk Reduction and Disaster Management National Action Plan consistent with the Cook Islands NSDS and the Regional Framework for Disaster Reduction and Disaster Management;
- A government-wide approach and stakeholder driven partnership toward natural hazard risk management adopted;
- Government is an active participant in the Pacific Islands Framework for Action on Climate Change (PIFACC); and
- Climate change awareness, plans and policies prepared in consultation with Island Councils and the private sector.

Main authorities responsible: Emergency Management C. Is., National Environmental Services.

Other collaborating agencies: Min. of Foreign Affairs, OMIA, Island Councils, Min. of Works.

8. *Research and training to improve land assessment and evaluation; land husbandry practices; farm and forest productivity and values; and land use planning*

8. (a) *Indicators of research effort that will assist the development of natural resource and knowledge:*

- An increase in funding for ecological and socio-economic research in natural resource issues;
- Technology transfer as a supplement to research;
- An increase in the number of technical officers with tertiary qualifications employed in natural resources, the environment, and land based production;
- The development and management systems and policies that take greater account of local environmental and social conditions;
- An improved database on environmental and socio-economic information;
- Technical advice and support provided to Landcare Groups;
- The development of formal mechanisms for the transfer of research results into applications for adoption by land owners;

- Participatory and RRA approaches applied to better understand those socio-economic factors that impact on sustainable land development and management;
- Protocols developed for information sharing and collaboration between government agencies.

Main authorities responsible: National Human Resources Dept, Min. of Education

Other collaborating agencies: Min. of Works, National Environmental Services, House of Ariki.

8. (b) Indicators of progress in the development of human resources include:

- Increased human resources capacity and training;
- Coordination among Government agencies to provide the education and training to support the environment and land-based production sectors;
- Effective extension programmes to demonstrate to farmers and land users the sustainable practices for sustainable land management and production.

Main authorities responsible: Dept of National HRD

Other collaborating agencies: Min. of Education, Min. of Agriculture, House of Ariki.

9. Institutional reform to support and enhance capabilities in all rural sector activities

9. (a) Indicators of progress towards more effective allocation of responsibility for decision making include:

- The existence of national and island land zoning and land use plans that:
 - are based on local consultative processes,
 - address all types of land use
 - recognise the complexity of the various land and marine ecological systems.

Main authorities responsible: Min. of Works

Other collaborating agencies: Min. of Agriculture, Min. of Justice, Min. of Marine Resources, National Environmental Services, OMIA, Island Councils, House of Ariki.

9. (b) Indicators of interdepartmental and administrative coordination conducive to sustainable development include:

- Strategy for strengthening GIS based National Information System to support national planning, monitoring and reporting developed.
- Delegation of administrative responsibility to a Board with appropriate representation from all interested parties, relevant sectors, and the outer islands;
- Regular national interdepartmental meetings;

- The development of a land user ministerial advisory groups;
- The establishment of interdepartmental advisers for communities, land owners and developers; and
- Coherence between legislation and adopted policies.

Main authorities responsible: Office of the Prime Minister

Other collaborating agencies: Min. of Justice, Min. of Works, Min. of Agriculture, National Environmental Services, House of Ariki.

9. (c) Indicators of progress towards greater community involvement include:

- The greater devolution of power and responsibility to local communities in a manner consistent with national policy;
- The employment of local negotiators, extension personnel and administrators to facilitate joint planning (and regulation);
- The development of mechanisms that enable land use control to be applied at the village level; and
- Increased involvement of all sectors of the community, and particularly youth and women, in locally based industries and resource use.

Main authorities responsible: Communities

Other collaborating agencies: Office of the Prime Minister, House of Ariki.

9. (d) Indicators of progress towards the greater inclusion of women in decision-making and resource management include:

- Active training for and involvement of women in all aspects of natural resource management demonstrated;
- Increased numbers of women working in the natural resources sector;
- Establishment of formal mechanisms for consultation with women in all aspects of natural resource management.

Main authorities responsible: Women's Affairs

Other collaborating agencies: Internal Affairs, Office of the Prime Minister, House of Ariki.

10. Good governance strategies to expand and diversify sustainable economic activity, increase employment, added value earnings and promotion of social development goals

Indicators of progress towards enhanced governance strategies to expand and diversify sustainable economic growth and promote social development goals include:

- Economic environment that encourages value-adding within the Cook Islands;

- Niche markets for marine and land based high value added products identified and existing markets further developed;
- Market information widely disseminated to growers, processors and exporters;
- Laws and regulations do not inhibit the development of viable processing industries based on marine and land derived products;
- Harvest and added value processing technology development are integrated with training programmes and industrial relations requirements;
- Increased diversity in local land based industries;
- Increased participation by communities in the production of goods for export.

Main authorities responsible: MFEM

Other collaborating agencies: Cook Is. Investment Corporation, Development Investment Board, Min. of Agriculture.

11. Cook Islands is an active member of the international community participating in programmes related to the global issues and protocols

Indicators of progress towards arrangements that strengthen the Cook Islands' contribution to the issues and protocols include:

- Participation in a number of important subregional, regional and international environmental, climate change, sustainable land management programmes, etc.;
- Implementing the international conventions to which the Cook Islands are signatory to;
- Effective exchange of information and expertise within the subregional, regional and international communities.

Main authorities responsible: Min. of Foreign Affairs

Other collaborating agencies: Office of the Prime Minister, Min. of Agriculture, Meteorological Service, Min. of Works, National Environmental Services.