



Tuvalu



*Environmental
Legislation
Review*



Environmental Legislation Review – Tuvalu

1994

*Prepared by
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and the
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Foreword

This Environmental Legislation Review for Tuvalu has been produced as an important component of the National Environmental Management Strategies (NEMS) Project. The NEMS Project was developed to address sustainable environmental development and planning issues in a number of Pacific island countries. It was funded by the United Nations Development Programme (UNDP) and the Australian International Development Assistance Bureau (AIDAB) and implemented through the South Pacific Regional Environment Programme (SPREP) as part of a broader UNDP assistance project called PMI: Planning and Implementation of Pacific Regional Environment Programme which concentrates on regional and in-country institution strengthening and training of environmental managers.

Pacific islanders have lived in close harmony with their environment for thousands of years and are well aware of its importance to their way of life. Pacific peoples today face the complex challenge, common to many other countries of the world, of integrating economic development with the need to protect the environment. This is the primary aim of sustainable development and must be addressed if the Pacific way of life is to survive. The introduction of appropriate legislation represents one important means by which sustainable development can be achieved in the Pacific. A fundamental first step is the identification and review of existing environmental laws, also taking into account traditional customary measures aimed at environmental protection. This review also investigates administrative procedures and policy to determine ways of incorporating and strengthening environmental laws within the existing structure in each of the Pacific island countries associated with this project.

The Environmental Legislation Review for Tuvalu looks at laws, administrative procedures and policy in terms of their effectiveness in addressing the major environmental issues existing in Tuvalu. The research has had a particular focus on the development of practical recommendations that build on the findings of the Review. This Review thus represents an important step along the road to improved environmental management and protection of the Pacific region.

This document forms one part of a series of legal reviews undertaken in several Pacific island countries. I would like to thank Ms Mere Pulea and Professor David Farrier for their work in preparing this Environmental Legislation Review.



Vili A. Fuavao

Director

South Pacific Regional Environment Programme

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Notes

At Independence, all Ordinances were redesignated Acts. These terms are used interchangeably throughout the Review.

The unit of currency in Tuvalu is the Australian dollar. All amounts are in Australian dollars unless otherwise specified.

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Chapter 10	Water Quantity and Quality	David Farrier
Chapter 11	Pollution and Waste Management	David Farrier
Chapter 12	Wildlife Conservation	David Farrier
Chapter 13	Protection of National Heritage	Mere Pulea
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Mere Pulea and David Farrier

Acronyms

CFC	chlorofluorocarbon
EEZ	exclusive economic zone
EIA	Environmental Impact Assessment
FAD	fish aggregation device
NEMS	National Environmental Management Strategy
SOPAC	South Pacific Applied Geoscience Commission
SPBCP	South Pacific Biodiversity Conservation Programme
SPREP	South Pacific Regional Environment Programme

Conclusions and Recommendations

1. Even where adequate environmental laws are in place, there is evidence of significant regulatory failure, and strategies need to be developed in order to ensure an adequate level of enforcement.
2. There is nothing in the Tuvalu Constitution which guarantees the citizens of Tuvalu a clean environment, or requires that development should be ecologically sustainable. Moreover, there are certain constitutional limitations to the Government seeking to achieve these objectives through legislation.
3. The range of responsibilities which can be conferred on Local Councils is sufficiently broad, but consideration needs to be given to the question of whether Local Councils are being adequately supervised in carrying out their responsibilities.
4. An understanding of the constraints and opportunities arising from the system of land tenure provides a vital background to the development of environmental policy in Tuvalu.
5. Consideration of environmental impact should become as much a part of Government decision-making processes as social and economic benefit.
6. Consideration of environmental impact should become as much a part of government decision-making processes at both the national and local levels as social and economic benefit.
7. Although detailed land use planning functions should rest with local authorities, it is essential that the overall responsibility for land use and physical planning policies remain with the national Government.
8. Land use planning provisions are currently contained in a number of pieces of legislation, and it is suggested that consideration be given to consolidating planning functions into new physical planning or land planning legislation. This should contain provisions for heritage protection and environmental assessment of particular development proposals.
9. The various pieces of legislation dealing with agricultural activities should be reviewed for the purpose of including provisions relating to the protection of the environment where appropriate. Soil conservation measures and research to improve the agricultural information base, taking into account the needs and aspirations of farmers, would be valuable when it comes to minimising the adverse impact of agricultural activities on the land and devising agricultural strategies.

10. Consideration should be given to extending the controls over land reclamation contained in the *Foreshore and Land Reclamation Ordinance 1969* to the reclamation of borrow pits through the dumping of rubbish. Any such amendment to the legislation should contain provision for environmental assessment of proposals to reclaim land.
11. Environmental impact assessment should be required as an integral part of the decision-making process relating to applications under the *Foreshore and Land Reclamation Act* for approval to remove sand, coral and rocks from designated foreshore. In light of the severe problems of coastal erosion faced by Tuvalu, consideration should be given to whether decision-making responsibility should be transferred from Local Councils to the Government.
12. Tuvalu's fisheries legislation contains the necessary structural elements for the effective management of both inshore, reef and pelagic fisheries, including the power to make regulations designed to conserve fish and crustacean stocks. The main issues are ones of implementation and enforcement.
13. The nurturing of traditional conservation practices, the use of regulations which build on to them and the cooption of traditional enforcement machinery are likely to prove the most effective methods of ensuring sustainable fishing practices within subsistence and artisanal fisheries, given the enforcement difficulties in this area. The first step is to identify those practices which are sensitive to conservation of fish stocks (or can be made sensitive with some adjustment) and those which actually have a detrimental impact.
14. Environmental impact assessment should be required as an integral part of the decision-making process relating to applications for licences to search for and extract minerals.
15. Mining regulations should be made.
16. There are serious problems with regard to allocation of responsibility in the area of water supply and sewerage, particularly in relation to the siting of wells, and provision and siting of toilets. There are a number of authorities with related functions but no adequate provision for co-ordination, and grey areas when it comes to regulatory responsibility. Councils appear to carry most of the responsibility, but they must be provided with adequate resources and effectively supervised by the Government. There should be a single body, such as the Public Health Unit or a Water Resources Board, with overall responsibility for water supply and sewerage.
17. The proposed Water Act should deal with questions of sewerage as well as water supply. Consideration should be given as to whether it should incorporate provisions relating to the conservation of water.
18. A certificate of adequacy of sanitation facilities should be required from the Public Health Unit before new houses can be occupied.

19. Tuvalu should take steps to regulate marine pollution from land based sources (other than oil pollution which is now covered by the *Marine Pollution Act 1991*), including garbage and sewage. This could be done by declaring particular substances to be pollutants under the *Marine Pollution Act 1991*.
20. Tuvalu should develop comprehensive legislation dealing with waste minimisation and the disposal of waste on land, including hazardous waste.
21. Tipping sites need to be adequately planned and regulated. This includes the reclamation of borrow pits by dumping waste. Environmental assessment should be mandatory prior to sites being nominated.
22. Apart from the confused position with regard to turtles, Tuvalu has a range of provisions which, if adequately implemented and enforced, would offer a considerable degree of protection to fauna on land from direct human interference. There is no provision for the protection of fish.
23. Attention needs to be given to developing an adequate definition of the wildlife to be covered by the *Wildlife Conservation Ordinance 1975* and to ensuring that this is in line with the definitions under the fisheries legislation. The list of protected birds was compiled some time ago and it would be appropriate at this stage to review it in light of what is now known about the conservation status of different species.
24. In light of evidence of the scarcity of all turtles, consideration should be given as to whether all species should be protected to some degree both on land and in the sea. In light of the major law enforcement problems that exist, however, the main compliance initiatives should be through customary controls, where they exist, and education.
25. The issue of law enforcement in response to breaches of the *Wildlife Conservation Ordinance* needs careful attention. Thought needs to be given to developing more sensitive compliance strategies than coercion through enforcement of legislation.
26. The present legislation offers no protection from interference with wildlife habitat by human development. An assessment needs to be made of the extent of threats to habitat and whether this requires the enactment of appropriate provisions dealing with the assessment of environmental impact of development on habitat, and its long-term protection.
27. Comprehensive legislation for the conservation and preservation of cultural properties should be developed. This should cover sacred and historic sites, sites of special national, spiritual and religious significance, historic buildings, and marine areas that are of national importance for conservation purposes.
28. A National Register listing cultural properties should be established.
29. Guidelines for the conservation and preservation of cultural properties should be developed and published.

1 Introduction

1.1 Overview

This Environmental Legislation Review for Tuvalu is part of the South Pacific Regional Environment Programme's (SPREP) National Environmental Management Strategy (NEMS) Project, carried out in seven countries in the Pacific region. The purpose of the Review is to assess the adequacy and inadequacies of environment-related provisions found within the existing legal system and follows a similar format to the reviews undertaken in other Pacific countries under the NEMS Project.

1.2 Scope of the Review

Basically, the law of Tuvalu reflects the country's historical evolution from British colonial administration to independence. The *Laws of Tuvalu Act 1987 (8/87)* declares what the law of Tuvalu is made up of. The Constitution is the supreme law. In addition, the following laws comprise the laws of Tuvalu:

- (a) every Act;
- (b) customary law: being the customs and usages existing from time to time of the people of Tuvalu;
- (c) the common law of Tuvalu, which comprises the relevant rules (derived from English common law and equity) as applied in the circumstances of Tuvalu. Any imperial enactment made after 1 January 1961 will be disregarded unless it has effect as part of the law of Tuvalu; or where it is inconsistent with an Act, an applied law or customary law;
- (d) every applied law: inherited imperial enactments of the United Kingdom which have effect as part of the Laws of Tuvalu (sections 4,5,6,7).

In practice, the common law has little to say when it comes to the environmental problems currently faced by Tuvalu. It was developed by British judges in a very different social and economic context at a time when environmental issues were narrowly defined in terms of disputes between neighbouring landholders, and there was very little awareness of the broader public interest at stake. We believe that customary law, on the other hand, has a great deal to offer in this context, given the enforcement problems which exist when attempts are made by physically remote Government authorities to impose regulations. However, research needs to be carried out to identify those customary rules and practices sensitive to the environment so that they can be reinforced through education and, where appropriate, more formal legal procedures. This is a lengthy and involved exercise which the consultants were not in a position to undertake, lacking both time and expertise. Ideally it should be undertaken by members of particular Tuvalu island communities who also have a broad expertise in environmental management. It may well be that appropriate personnel will first have to be trained.

The primary focus of the Review has been, therefore, on legislation. As in most other countries, Tuvaluan environmental law is not found in a single piece of legislation, reflecting the range of problems falling within this broad topic. Instead, the law relating to the environment is scattered throughout a number of pieces of legislation and bye-laws. Much of the legislation which does exist was made some time ago, before independence, and needs to be amended to take into account new information and changed economic and environmental circumstances and conditions.

A broad concept of environmental law has been adopted for the purpose of this Review. It has not been confined to those areas of law which deal with protection and conservation of the environment, both natural and human-made. Laws concerned with facilitating the development of natural resources have an equal claim to be included because preservation and development are simply opposite poles on a continuum of possible alternative uses of natural resources. Even where a decision to develop is the likely outcome of the decision-making process, it is important that legal machinery be in place to ensure that environmental factors are taken into account and that the proposal is modified in light of these. Nowadays the demand is that development be sustainable, and the law clearly has an important role to play in achieving this end. Wherever law supervises proposals involving the use or development of natural resources, it falls within the definition of environmental law. Natural resources include not only the traditional categories of minerals, forests and fisheries, but, more broadly, the land as a whole, as well as the sea and air. When we pollute the sea or the air, we are using a natural resource. The consultants consider that the potential for including conditions designed to secure environmental protection in leases and licences has been underutilised.

Abuse of natural resources can also have a direct effect on human health. Some of the most pressing environmental problems faced by Tuvalu today are also health problems, and the laws dealing with these are covered in detail in the Review.

In addition, the Review discusses the law relating to land tenure in some depth to put environmental law in Tuvalu into a broader context. This discussion should be an important resource for those charged with the task of developing and implementing appropriate environmental policy in the country. The system of land tenure plays a vital part in determining approaches which can be taken by environmental law in any country. Where, as in Tuvalu, there is no tradition of government interference in land tenure and use, environmental law must necessarily rely on different techniques to those adopted in countries where such a tradition is less powerful.

1.3 The Role of Law

Environmental law in essence falls into two categories. There is firstly the law addressed to those who want to engage in activities which could harm the environment, or may already be doing so. Frequently, the approach taken involves prohibiting a particular activity unless prior permission (such as a licence, a permit, an approval or a consent) is obtained from government decision-makers, and the activity is carried out in accordance with the terms of the approval. Traditionally these requirements have been backed up by criminal law, with its threat of fines, and perhaps even imprisonment.

The second category of environmental law is the law addressed to the government authorities charged with the task of making decisions about whether particular uses of resources or development should be permitted, on application from those wishing to carry out an activity. Critical to this are requirements that proposals should be subject to adequate environmental impact assessment and that the ultimate decision should pay adequate regard to environmental protection.

Both types of environmental law raise questions of enforcement. As well as hearing criminal prosecutions, the courts have traditionally been prepared to supervise decision-making processes through the common law doctrines of judicial review or administrative action. However, in relation to both prosecutions and civil proceedings for judicial review, the courts are crucially dependent upon someone taking the initiative and bringing proceedings before them. In practice, there have historically been significant obstacles standing in the way of legal proceedings being brought, even in countries like Australia and the United Kingdom. This is the case with civil proceedings for judicial review, where in practice the burden of enforcement has been left to members of the public, while, at the same time, the law has sought to make it as difficult as possible to bring proceedings (through doctrines such as "standing to sue"). It is also, however, true of criminal proceedings, where those responsible for enforcing environmental criminal law have traditionally taken the approach that prosecution should be used only as a last resort, after all other methods of persuasion have failed. In Tuvalu, the consultants found that in many situations where adequate environmental legislation does exist, there are problems of enforcement and non-compliance.

This Review focuses on the use of legal mechanisms to change the way that people behave in relation to the environment, but it is important to remember that the law is not the only important tool that can be used for environmental protection. Other methods to be considered of inducing changes in behaviour include environmental education programmes through schools, churches and the media, and economic incentives, but these are beyond the scope of the Review.

1.4 Review Process

This Review has relied on the Tuvalu National Development Plan IV: 1988–1991 (DP IV), the draft *Tuvalu National Report for the United Nations Conference on Environment and Development* (UNCED Report 1992) and other reports and interviews for information, to supplement the survey of statutory environmental provisions. The draft Review was circulated for comments to the government ministries and statutory bodies directly concerned. It was also discussed at the NEMS Workshop in Tuvalu from 9 to 11 November 1993. Comments received have been incorporated in the final Report. The Review offers proposals for consideration with a view to promoting improvements in environmental regulation where gaps have been identified.

The reviewers were in-country from 28 February to 5 March 1992. Given the short span of the Review period, it has not been possible to analyse in depth the effectiveness of any statute or bye-law listed in the Review. The description of the contents of the laws and environmental provisions is just the first step. Further research needs to be done by the

people of Tuvalu, not only into the effectiveness of environmental provisions in current legislation but also into customary practices that are sensitive to the environment so that they can be reinforced, if necessary, by appropriate legal provisions.

2 Constitutional and Administrative Structure

2.1 Legislation

The power to make laws lies in the Parliament (Constitution of Tuvalu 1986: s. 84). Proposals for legislation are put up to Parliament in the form of Bills. Any member of Parliament can introduce a Bill (s. 111). Bills become Acts once they have been passed by Parliament and received the assent of the Head of State (s. 86). Any legislation which is inconsistent with the Constitution is void to the extent of the inconsistency (s. 3). The High Court is responsible for determining questions of constitutional interpretation, including whether Acts of Parliament are unconstitutional (s. 131).

Legislation frequently gives power to make decisions to Ministers. Ministers are appointed from the members of the Parliament by the Head of State acting on the advice of the Prime Minister (ss. 62, 67). They are assigned their roles, usually responsibility for a department of government (s. 75). The Cabinet consists of the Prime Minister, who calls the meetings (s. 76), and all the other Ministers (s. 73). It is responsible to Parliament (s. 74).

The general position is that the Head of State (in practice, the Governor-General: s. 58), when exercising responsibilities under legislation, must act in accordance with the advice of Cabinet or a Minister acting under the authority of Cabinet. The legislation may, however, make it clear that he or she is to act on advice from someone else, or simply after consultation, or in his or her own deliberate judgement (i.e. exercising an independent discretion which must not be arbitrary or capricious (Schedule 1, cl. 18) (s. 52).

2.2 Fundamental Human Rights and Freedoms

The Principles of the Constitution, set out in the Preamble, are declared to be part of the basic law of Tuvalu (s. 13). They include a commitment to the maintenance of Tuvaluan values, culture and tradition and to the “search for consensus” rather than “alien ideas of confrontation and divisiveness”. This emphasises the importance of culture and traditional practices in conserving the environment, as opposed to coercion by means of criminal law. At the same time it places limits upon the use of criminal law to modify traditional practices which harm the environment. If an act done under a valid law is, in particular circumstances, “harsh or oppressive”, “not reasonable in the circumstances” or is “otherwise not reasonably justifiable in a democratic society having a proper respect for human rights and dignity”, it is unlawful (s. 12). All laws must be “reasonably justifiable in a democratic society that has a proper respect for human rights and dignity”, taking into account “traditional standards, values and practices” (s. 15).

Part II contains provisions concerned with the protection of fundamental human rights and freedoms. One aspect of the guarantee of “freedom based on law” is the “least restriction on the activities of individuals *consistent with the public welfare*” (s. 10: emphasis supplied).

There is no specific guarantee in Part II of a clean and healthy environment, although section 28 makes it clear that this does not mean that such a right may not be “retained by

the people or conferred by law". There is a general declaration of the right to life and security of the person, subject to the rights of others, the national interest and Tuvaluan values and culture (s. 11). The "national interest" includes public safety and the protection of Tuvalu's international reputation but does not include any specific reference to environmental protection (s. 9(2)), so that there is no way in which this human right can be overridden in the interests of protecting the environment, except where issues of public safety or the country's international reputation are at stake. At first sight it might appear that there is some comfort for those seeking a guarantee of a clean and healthy environment in the declaration of a right to life. However, this general declaration is later qualified so that it becomes only a right not to be killed *intentionally* (s. 16). On the other hand, it is a principle of the Constitution that the people of Tuvalu have a right "to a full, free and happy life, and to ... personal and material welfare" and this is declared to be part of the basic law (s. 13). There may be some room here for the development of a human right to a clean and sustainable environment.

There is a general guarantee against deprivation of property, except where it is for a public purpose, adequate compensation is paid and there is a sufficient reason for causing hardship to those holding property interests (s. 20). In some jurisdictions, equivalent provisions have been interpreted as requiring payment to landowners, in certain sets of circumstances, for the imposition of land use restrictions designed to protect the environment from insensitive land use practices (e.g. restrictions on the removal of vegetation). In Tuvalu, "deprivation" is defined to include situations where property is compulsorily taken possession of or an interest or right over property is compulsorily acquired (s. 20). No interest or right is acquired where the State enacts legislation which simply restricts the use to which the land is being put, except, perhaps, where the restrictions are so great that the owner is essentially being expected to set aside land for public purposes (e.g. a situation where nature conservation requires the land to remain largely undisturbed). A "deprivation" also takes place, however, where property is made "useless or valueless for the purposes for which it was used". This, then, becomes the issue where legislation places restrictions on the use of land in the interests of environmental protection.

The guarantee against deprivation of property is subject to a number of exceptions:

- for as long as necessary to carry out work of conservation of natural resources (s. 20(9)(a)(viii));
- for as long as necessary to carry out work relating to agricultural development or improvement which the owner or occupier has refused to carry out (s. 20(9)(a)(viii));
- where acquisition is reasonably necessary because of "injuries to the health of humans, animals or plants" (s. 20(9)(a)(v));
- for as long as necessary to carry out surveys to determine the existence and extent of minerals, but not for the mining operation itself (s. 20(9)(a)(viii)).

The guarantee against deprivation of property would prevent the Government from taking possession of private land for the public purpose of creating a national park (s. 20(4)) if it

was not prepared to pay compensation or if there was no reasonable justification for the hardship caused.

Another provision which at first sight might appear to have the potential to restrict legislation designed to protect the environment by restricting human entry into certain areas, such as nature reserves, is that which guarantees “the right to move freely throughout Tuvalu” (s. 26). There are, however, exceptions to this in the case of restrictions imposed on the use of land (s. 26(3)(e)) and restrictions on movement and residence which are reasonably required to meet the special circumstances of a part of Tuvalu because of potential overcrowding, resource shortages or disruption of ecology (s. 26(3)(d)).

2.3 Powers of Local Councils

Local government councils for eight of the islands of Tuvalu have been established under the provisions of the Local Government Ordinance. The Council for Niutao also covers the Island of Niulakita (s. 3(1) and Schedule 1). A Council’s area of authority includes not only the land and the lagoon, but also the first three miles of the territorial sea, extending out from the coast. This is subject to any ownership or rights over land, foreshore, marine life and mineral deposits contained in other legislation (e.g. if a fisheries officer grants a local fishing vessel licence which allows commercial fishing in the lagoon or the territorial sea).

The President of the Council is elected by the Maneapa (s. 14(1)), defined as the “traditional assembly of elders which in each island shall have the meaning and composition given to it by local custom and tradition” (s. 2(1)). The President can be removed by a two-thirds majority of the Maneapa in a secret ballot (s. 14(2)). Council meetings must be held in the Maneapa and be open to the public, unless the Council resolves at any time that the public be excluded (s. 22). Resolutions of the Council must be read to the Maneapa (s. 5(3)).

Councils have the general function of maintaining “order and good government” within their areas (s. 36(1)) and the *duty* to prevent the commission of offences (s. 37). Legal proceedings could be brought to enforce this duty by someone with standing to bring such an action. The Minister responsible for Local Government can allow a Council to exercise any of the powers and duties carried out by other public officers (s. 116).

In addition, Councils can exercise any of a long list of functions set out in Schedule 3 to the Act (s. 45(1)). These include:

- controlling plant diseases, weeds and pests
- controlling methods of husbandry
- regulating areas and methods of planting and types of crops and trees
- regulating the keeping of livestock
- providing for the improvement and control of fishing and related industries
- regulating the hunting and killing of animals, reptiles, birds and fish
- prohibiting the construction of any new building without council permission

- regulating the erection and construction, demolition, conversion, alteration, repair, sanitation and ventilation of public and private buildings and structures, including requiring approval for new buildings
- providing for building lines and the layout of buildings
- prescribing conditions for the sites of buildings
- providing for the demolition of dangerous buildings
- regulating the making of pulaka pits and other excavations
- regulating advertising structures
- regulating the use of natural building materials
- establishing and controlling tree nurseries, forests and woodlands and selling the produce
- preventing the erosion of land
- engaging in and promoting land reclamation
- carrying out sanitary services dealing with rubbish and excreta and prohibiting acts detrimental to the sanitary condition of the area
- providing a public water supply
- regulating the sinking of wells and closing of wells
- preventing water pollution
- regulating the storage of inflammable and offensive materials
- preventing and removing public nuisances
- making and maintaining roads, paths, bridges, drains and water-courses
- regulating the planting or destruction of vegetation along roads or in public places
- providing that the owners and occupiers of land maintain it, clear it and keep it free of vegetation and rubbish
- prescribing the conditions under which offensive trades may be carried on
- preserving and controlling the removal of any antique artefact.

If a council fails to perform any of the functions assigned to it, the Minister can make an order directing it to do so, or transfer them to another person or body (s. 47).

One of the main ways councils can seek to perform their functions is by making bye-laws (s. 52). Bye-laws can amend customary laws in spite of the recognition given to these under the *Laws of Tuvalu Act 1987* (s. 50(4)). They cannot, however set up licensing systems (s. 50(3A)).

The Minister can veto or amend proposed bye-laws because they do not come into force unless he or she makes them (s. 51(2)). After giving the Council reasonable notice and considering its representations, the Minister can cancel or amend existing bye-laws and even make completely new ones (s. 51(3)).

2.4 Administrative Responsibilities for Environmental Matters

Tuvalu's national report for UNCED (Government of Tuvalu 1992) summarises the current administrative responsibilities for environmental matters as follows:

Each Ministry deals with environmental issues falling within its own area of responsibility. There is no single body with responsibility for environmental protection and management. An attempt is now being made to initiate such co-ordination through the Office of the Prime

Minister. However, even within that Office, the spread of responsibilities of existing staff across a range of issues other than environmental, necessitates the creation of an Environmental Unit as a planning and co-ordinating body with multi-sectoral environmental responsibilities. The operation of this Unit could be strengthened by the extension of the Inter-Ministerial Co-ordinating Body, the National Development Strategy Committee, to become the Environmental Unit's advisory committee.

The establishment of a more structured institutional arrangement for environmental matters has been brought about by arguments that it is a more favourable route to adopt in order to achieve better environmental protection. With environmental management responsibilities sectorally structured, there are no effective mechanisms for overall management and planning, and environmental matters are generally given subsidiary recognition to economic factors. Sectoral responsibilities can also bring about conflicts and confusion which need to be minimised or eliminated for more effective environmental management. This Review supports the view expressed in the UNCED Report that environmental matters should be co-ordinated by a central structure such as an Environmental Unit.

An Environmental Unit is envisaged to have a co-ordinating, planning and management role, but such a Unit is vulnerable to change if it is not supported by policies and appropriate legislation. With the appropriate legislative framework, the Unit will not be solely dependent on the goodwill and co-operation of others to fulfil its environmental responsibilities. The Unit should be in a position to formulate overall environmental policies and strategies, set environmental standards, amend and prepare new legislation concerning the environment, determine environmental assessment requirements, monitor pollution and waste management programmes, initiate legal action against offenders and carry out environmental audits. This list is by no means exhaustive. It is only an indication of the extent of the responsibilities, if the Government of Tuvalu regards an Environmental Unit as the most appropriate structure.

2.5 Conclusion

There is nothing in the Tuvalu Constitution which specifically guarantees the citizens of Tuvalu a clean environment or obliges the Government to ensure that development is ecologically sustainable. It is, however, a principle of the Constitution that the people of Tuvalu have a right "to a full, free and happy life, and to ... personal and material welfare" and it may be that this will allow the courts to explore the idea of a right to a clean and ecologically sustainable environment.

There are, on the other hand, constitutional limitations to attempts by the Government to achieve environmental objectives through legislation, in addition to political ones. There is a constitutional guarantee that Tuvaluan customs and traditions will be maintained and this could extend to situations where they clash with environmental management objectives. There are also restrictions placed on the use of environmental regulations, stemming from the commitment to consensus solutions (although, increasingly, Governments with no such constitutional requirements are turning to alternative methods of dispute resolution which rely on a search for consensus). Finally, even though the general position is that the Government can regulate activities on private land without paying compensation, an obligation to pay does arise where property is made "useless or valueless for the purposes

for which it was used” as well as in situations where the Government wishes to acquire the land (e.g. to create a park or reserve).

The range of responsibilities which can be conferred on Local Councils is sufficiently broad. The main issue which arises here is whether there is adequate supervision by the Government over the effective exercise of these responsibilities. The question is a political one, for the legal powers are adequate. The Government has chosen to delegate limited supervisory power to the Maneapa, which elects and can dismiss the President of the Council.

3 *International Environmental Conventions*

3.1 *Introduction*

This chapter focuses on regional and international environmental conventions to which Tuvalu has become or is about to become a Contracting Party as part of a regional and global effort to protect the environment. Some pre-independence international conventions signed by Great Britain also extend to Tuvalu.

3.2 *Atmosphere*

3.2.1 *Convention for the Protection of the Ozone Layer (Vienna, 22 March 1985)*

The *Convention for the Protection of the Ozone Layer* is at present the most important treaty designed to protect one of the major components of the atmosphere. The depletion of the ozone layer, damaged by chlorofluorocarbons (CFCs), halons and other substances, has been identified as an environmental problem of global character.

The Convention requires the Parties to take all appropriate measures, in accordance with the Convention and related Protocols, to protect human health and the environment against adverse effects resulting from human activities which modify the ozone layer (Article 2). The Parties are not only required to co-operate on the formulation of agreed measures, procedures and standards to implement the Convention, Protocols and Annexes, they must adopt appropriate legislation and administrative measures and develop appropriate policies to control, limit, reduce or prevent human activities under their jurisdiction and control that are likely to have adverse effects on the ozone layer.

The Convention provides for the exchange of scientific, technical, socio-economic, commercial and legal information, taking into account the particular needs of the developing countries (Article 4).

The Protocol on Substances that Deplete the Ozone Layer (commonly called the Montreal Protocol and established under the *Convention for the Protection of the Ozone Layer*) sets out in Article 4 the restrictions on trade which apply to countries who are not parties to the Convention and Protocol. Article 4 provides that:

within one year of the entry into force of this Protocol, each Party shall ban the import of controlled substances from any State not a Party to the Protocol;

beginning on 1 January 1993, no party operating under paragraph 1 of Article 5 may export any controlled substances to any State not a Party to the Protocol.

The list of controlled substances are set out in Annex A of the Montreal Protocol. It establishes precise quantitative restrictions on the use of CFCs and halons. It provides for special treatment for developing countries by requiring the Contracting Parties to:

facilitate access to environmentally safe alternative substances and technology for Parties that are developing countries and assist them to make expeditious use of such alternatives (Article 5(2));

and

undertake and facilitate bilaterally or multilaterally the provision of subsidies, aid, credits, guarantees or insurance programmes to Parties that are developing countries for the use of alternative technology and for substitute products (Article 5(3)).

Tuvalu has acceded to the *Convention for the Protection of the Ozone Layer* and the Montreal Protocol.

3.2.2 Convention on Climate Change (Rio de Janeiro, 9 May 1992)

The United Nations *Convention on Climate Change* was adopted on 9 May 1992 by the Intergovernmental Negotiating Committee established by the General Assembly. The Convention was opened for signature at the United Nations Conference on Environment and Development at Rio de Janeiro and remained open at UN Headquarters until 19 June 1993.

The aim of the Convention is to protect the atmosphere from the build up of anthropogenic gases that trap heat from the sun, causing the "greenhouse effect" that will result in global warming and affect natural ecosystems and humankind.

One of the strategies incorporated in the Convention is for Parties to adopt measures to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.

Tuvalu signed this Convention on 8 June 1993 and is expected to ratify it in the near future.

3.3 Marine Environment

The protection of the marine environment is high on Tuvalu's agenda because traditional Tuvaluan life, culture and economic development are tied intimately to the sea. The dangers posed by human activities and pollution from the dumping of wastes at sea could have serious adverse effects on fisheries resources and aquatic ecosystems. Tuvalu is a Party to a number of Conventions to protect the marine environment.

3.3.1 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Dumping Convention)

The *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972* (London Dumping Convention) sets out the obligations of Parties to prohibit the dumping at sea of wastes. Under Article 4, the Parties are required to prohibit the dumping of wastes or other matter except as specified in the Annexes. Dumping of the

wastes listed in Annex I is prohibited. Dumping of the wastes listed in Annexes II and III requires special permission. Periodical meetings of the Parties are held to update the list of noxious substances.

Kiribati and Nauru initiated a strong move for a complete ban on dumping of nuclear wastes in the ocean at the 1983 meeting on the London Dumping Convention. As there was opposition to the Kiribati/Nauru proposal from nuclear nations, Spain proposed a moratorium on all kinds of ocean dumping of radioactive wastes as a compromise until the Kiribati/Nauru proposal could be reviewed by an expert group.

Tuvalu became a Party to this Convention on 17 November 1975 through the ratification by the United Kingdom. This extended the Convention to Tuvalu.

3.3.2 Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific (Wellington, 24 November 1989)

The *Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific* (Wellington, 24 November 1989) restricts the use of driftnets in the South Pacific region in order to protect and conserve marine living resources. Under Article 3, each Party is required to take measures not to encourage the use of driftnets, by prohibiting their use and the transshipment of catches, and to restrict access to ports of vessels using driftnets. Each Party is to take appropriate measures to implement and apply the provisions of the Convention and to co-operate in surveillance and enforcement measures (Article 4).

Tuvalu has signed but not ratified this Convention.

3.3.3 South Pacific Forum Fisheries Agency Convention 1979

The *South Pacific Forum Fisheries Agency Convention 1979* established the Forum Fisheries Agency, located in Honiara, Solomon Islands. The objectives of the Agency are to harmonise fishery management policies; facilitate co-operation in surveillance and enforcement; and the processing and marketing of fisheries with States outside the region; and to arrange for reciprocal access by member States to their respective 200-mile exclusive economic zones (EEZ).

Tuvalu is a Party to this Convention.

3.3.4 International Convention for the Prevention of Pollution from Ships 1973 and as modified by the Protocol of 1978

The *International Convention for the Prevention of Pollution from Ships 1973 and as modified by the Protocol of 1978* seeks to achieve the elimination of international pollution of the marine environment by oil and other harmful substances and to minimise their accidental discharge. Accidental releases of oil and other harmful substances from ships have been recognised as a serious source of pollution. A Party to this Convention is obliged to take action for any violation by ships flying its flag or within its jurisdiction. Annexes to this Convention contain detailed technical rules covering such matters as pollution by oil, noxious liquid substances, sewage and garbage from ships.

Tuvalu acceded to this Convention on 22 August 1985.

3.3.5 *United Nations Convention on the Law of the Sea 1982*

The *United Nations Convention on the Law of the Sea 1982* was drafted with the specific objective of protecting and preserving the marine environment. The Convention introduces the concept of the 200-mile EEZ and there are detailed provisions for safeguarding marine species, as well as protecting the environment from pollution by dumping from vessels, from land-based sources and during exploration. The Convention places a duty on State Parties to conduct environmental impact assessments on proposed activities in the marine environment, as well as a duty of care to take all necessary measures to prevent pollution from damaging coastlines, flora and fauna, and interfering with the ecological balance of the marine environment.

Tuvalu is a signatory to this Convention but had not ratified at the time of this Review.

3.4 *Nuclear*

3.4.1 *South Pacific Nuclear Free Zone Treaty 1985*

The objectives of the *South Pacific Nuclear Free Zone Treaty 1985* are to:

- establish a nuclear free zone in the region and to keep the region free from environmental pollution by radioactive wastes at sea within the South Pacific Nuclear Free Zone (Article 7(a));
- prevent the testing of any nuclear explosive devices in the territories of Parties (Article 6(a)); and
- prevent the stationing of nuclear weapons in their territories (Article 5(1)).

The Treaty is supplemented by three Protocols. The first invites France, the United Kingdom of Great Britain and Northern Ireland and the United States of America to apply prohibitions contained in Articles 3, 5 and 6 to Territories within the South Pacific Nuclear Free Zone for which they are internationally responsible. The other two Protocols respectively invite France, the People's Republic of China, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America not to use nuclear explosive devices within the zone.

Tuvalu has signed and ratified this Treaty.

3.5 *Biological Diversity*

3.5.1 *Convention on Biological Diversity 1992*

The *Convention on Biological Diversity*, which opened for signature at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, requires countries to take appropriate action through regulation or management to protect their biological species, and genetic diversity within species and ecosystems. The conservation of biological resources requires Contracting Parties to establish a system of protected

areas, to rehabilitate and restore degraded ecosystems and to promote the recovery of threatened species.

Sustainable use of biological resources must be promoted through co-operation between Government authorities and the private sector. The support of the local population is promoted by encouraging the use of customary practices that are compatible with conservation or sustainable use requirements. The Convention places an obligation on individual countries to assist developing countries financially and through technical expertise to conserve their biological resources.

Tuvalu signed this Convention on 8 June 1992 but had not ratified it at the time of this Review.

3.6 Protection of Natural Resources and Environment

3.6.1 Convention for the Protection of the Natural Resources and Environment of the South Pacific Region 1986 (SPREP Convention)

The *Convention for the Protection of the Natural Resources and Environment of the South Pacific Region 1986* (SPREP Convention) and two Related Protocols, namely the Protocol for the Prevention of Pollution of the South Pacific Region by Dumping, and the Protocol Concerning Co-operation in Combating Pollution Emergencies in the South Pacific Region, set out a comprehensive legal framework to protect the marine environment of the Pacific region.

The Convention places an obligation on Contracting Parties to take all appropriate measures to prevent, reduce and control pollution in the area governed by the Convention. Pollution caused by discharges from vessels, land-based sources, seabed activities, the disposal of wastes, the storage of hazardous wastes and the testing of nuclear devices is specifically mentioned for special attention. Article 16 promotes the use of environmental impact assessment to assess the potential effects of projects on the marine environment.

Tuvalu is a Contracting Party to this Convention and Related Protocols.

4 Land Tenure

4.1 Introduction

This chapter provides a brief background summary of Tuvalu's land tenure system. It is impossible to understand the ways in which land is controlled, used, developed, exploited and protected without having some basic knowledge of land tenure. Other laws that directly or indirectly affect natural resources can then be viewed in context.

In Tuvalu, most of the land is held in customary ownership; the extent to which the current law permits use and development or requires protection of natural resources must be understood against this background.

Tenure is the method of holding land. Crocombe (quoted by Namai 1987: 30) describes it as the way in which people obtain, use and distribute rights to land. Land tenure in Tuvalu is principally based on customary law and land can be used, leased, transferred and inherited only in accordance with:

- the *Native Lands Ordinance 1957* as amended; and
- the *Tuvalu Lands Code 1962*.

The Native Lands Ordinance begins with the basic premise that native land cannot be alienated by sale, gift, lease or otherwise to anyone who is not a native except in accordance with the provisions of the Native Lands Ordinance (s. 5(1)), but this does not prohibit or restrict the alienation of native land to the Crown, a Local Government Council or a society registered under the Co-operative Societies Ordinance (s. 5(2)). All persons who own or are eligible to own native lands are subject to the jurisdiction of the Lands Court (s. 11) and any attempt to transfer, transmit or otherwise deal with native land without first obtaining the approval of the Lands Court is null and void (s. 13). Leases and sub-leases of native land need the approval of the Minister responsible (s. 3), but the Court may approve or disallow such leases (s. 18).

Titles to native lands registered by the Native Lands Commission and by the Lands Court under section 14 (i.e. where land has been found by the Commission to have existed at the time of its inquiries but was not registered) and section 19 (1)(b) (i.e. garden pits, ponds, fish traps and sea walls constructed with the Court's permission subsequent to the registration of the title by the Commission) are indefeasible (i.e. the titles cannot be annulled or forfeited). In addition, where the Lands Court has approved the transfer of any native land under section 19(1)(a) (i.e. where all transfer of titles to land is approved by the Court) as a result of proceedings of the Lands Commission on the islands concerned, and the transfer has not been varied on appeal, the new title registered in the Court Register is indefeasible (s. 4(2)).

4.2 The Powers of the Lands Court

Lands Courts are established within the area of authority of each Island Council. Each Lands Court consists of not less than six members appointed by the Governor-General

acting in accordance with the advice of the Public Service Commission and subject to the approval of the Chief Justice. The Governor-General also appoints the President and Vice-President of each Court from amongst the Court membership in accordance with the same procedure. Those ineligible for appointment to the Lands Court are island magistrates, members of the Local Government Council, a member or special member of any committee of a Co-operative Society and a member of the Lands Court Appeals Panel (s. 6(1),(2)).

The Lands Courts have jurisdiction in all native land matters and will hear and adjudicate in all matters concerning land, boundaries and transfers of titles registered in the Register of Native Lands. They also have jurisdiction to hear any disputes concerning the possession and use of native land. They adjudicate in accordance with the provisions of the Lands Code and, where the Code is not applicable, in accordance with local customary law (s. 12). Customary law cannot be applied universally as variations exist in the way in which land is held and the rules can differ from island to island. The Lands Court is also a Court of Probate with respect to native wills. It has power to adjudicate in accordance with native customary law in all cases arising from the administration and partition of native estates (s. 15); native adoption and the conveyances of land which such adoption may entail (s. 16); and the determination of native customary fishing rights (s. 17).

4.3 Lands Courts Appeals Panel

The Lands Courts Appeals Panel consists of a President, Vice-President and three other members appointed by the Governor-General acting in accordance with the advice of the Public Service Commission and subject to the approval of the Chief Justice (s. 9(1)). All appeals from judgments, decisions or orders of the Lands Courts lie, in the first instance, to three or more members of the Appeals Panel, who are, in each case, designated by the President or, in his absence, the Vice-President (s. 10).

4.4 Customary Law

Tuvalu's land tenure system is mainly determined by written and unwritten customary law. The main feature of the tenure system is "the subdivision of plots on the basis of inheritance through which both males and females are entitled to inherit" (Government of Tuvalu 1991: 244).

Unwritten customary law prescribed and determined titles and resolved disputes over land prior to 1892 when Tuvalu (then known as the Ellice Islands) became part of the British Gilbert and Ellice Islands Protectorate (later Colony). The intervention of statute (the Native Lands Ordinance) during the colonial period preserved those customary practices that could be generally classified and standardised. The Tuvalu Lands Code summarises some of the main rules of custom applying to the various islands. "The Lands Court on each island will apply these customary rules unless the Court finds that they do not give a fair result, according to custom. If there is no written rule about the dispute in the Lands Code, the Court may apply an unwritten rule" (Marsh 1988: 53) in accordance with section 12 of the Native Lands Ordinance.

The *Laws of Tuvalu Act 1987* declares customary law to be part of the laws of Tuvalu except where there is inconsistency with any current Acts or applied laws (s. 5(2)).

Schedule 1 of the Act provides for the ways in which customary law can be determined and recognised (s. 5(3)). Under Schedule 1, customary law may be applied in a case in relation to:

the ownership by custom of or rights in, over or in connection with land owned by a native or natives (in this Schedule referred to as “native land”) or

- (i) anything in or on native land; or
- (ii) the produce of native land,

including rights of hunting on, or gathering, or taking minerals from, native land (s. 4(a)); or

the devolution of native land or of rights in, over or in connection with native land, whether:

- (i) on the death or birth or adoption of a person; or
- (ii) on the happening of a certain event (s. 4(d)).

Schedule 1 does not affect the operation of the Native Lands Act or the Tuvalu Lands Code (s. 7). The Laws of Tuvalu Act also does not affect the power of Local Government Councils under the Local Government Ordinance to amend customary law when making Bye-laws (s. 50).

4.5 Forms of Tenure

In Tuvalu, land is a family affair. Family land areas were acquired from ancestors or chiefs from the past and later divided (Pasefika 1988). Under the *Interpretation and General Provisions Act 1988*, land means “land covered by water, any estate or interest in land, all things growing on land, and buildings and other things permanently fixed to land and any cellar, cistern, sewer, drain or culvert in or under land” (s. 10(1)). Land can be acquired through inheritance, will, exchange, adoption, sale or gifting. The customary rights associated with land usage and disposal are described in the Tuvalu Lands Code.

Land can be held:

- (a) ‘*Kaitasi*’ that is, land held by people living or eating together on one estate as joint-owners, for example by brothers and sisters or the issue of some deceased brothers or sisters who were joint-owners. (Joint-owners in a *Kaitasi* estate may be more distantly related than brother and sister). *Kaitasi* property is usually listed under the name of one person who is the head of a family group, and the names of all joint-owners are listed under his name or against pieces of land or garden pits. Those persons shown as *Kaitasi* are the only ones entitled to eat off *Kaitasi* property shown against their names (Code 17). Whenever an estate is ‘*Vaevae*’ (i.e. where property is distributed and each individual owner takes his share from that estate) then *Kaitasi* does not apply. *Vaevae* applies when there is a “dispute amongst the descendants of the grandfather and the lands (are) distributed amongst the children usually in such a way that the eldest son receives most land and pits for pulaka (the staple tuber). Adopted children must be given one land plot and one pulaka pit and any illegitimate children (will) come into this same category” (Leupena & Lutelu 1987: 148).

- (b) *Communally*. Communal land can be located in village areas or other areas controlled by the Local Government Council. "The produce collected from communal lands outside village areas will be divided equally amongst the people present on the island unless the produce is used for communal feasts or any other project benefiting all the people on the island. If any person entitled to a share of produce from communal lands wishes to elect out of communal feasts or communal projects of any nature, then he may do so and may receive his share of the communal lands for his own use" (Code 16(i)).

Leupena and Lutelu (1987: 149-150) explain that communal land is found especially in Vaitupu and Funafuti and that there are two types. The first type is controlled by the chiefs. If anyone wishes to use any of the land resources, then the permission of the chief must be first obtained. The second type is owned by everyone on the island and any land produce (e.g. coconuts) may be used on the land and not taken away.

4.6 Village Land

The land on which a village stands is considered in the same way as if it were communal land. When a village is moved elsewhere, the land reverts to its original owners. But in Nanumea, Niutao and Nukulaelae, if any landowner suffers because of insufficiency of land elsewhere for the maintenance of his family, he can go before the Lands Court with the householders whose houses are on his land in the village, and enter into an agreement with them for exchanging parts of their land outside the village for the house sites on the owner's land in the village. But in Funafuti village, if a householder does not have sufficient land of his own in the village area to build a house, the Lands Court may, if private agreement on the exchange of land plots cannot be reached, order a person owning a suitable plot of land in the village area to exchange it with the person who wishes to build a house in the village area for that person's land found elsewhere (Code 15).

4.7 Owner's right to distribute property

The duty of care extended by parents to children and children to parents is of paramount importance and goes to the core of the land tenure system.

The owner's right to use, distribute and control property is subject to a substantive constraint and that is to ensure that his children are not prevented from obtaining a livelihood from the land. In such cases the Land Court can order:

- the owner not to use the property himself; and
- that land be set aside for the children's maintenance. The setting aside of property does not constitute a transfer (Code 1(i)).

The owner can direct that the next of kin receive no share in the property if it can be proved in the Lands Court that the next of kin has deliberately neglected the owner (Code 2). The distribution of an owner's estate to someone other than the next of kin will only be allowed if the next of kin has been deliberately neglectful and if the majority of the next of kin agree (Code 3(ii)).

4.7.1 Distribution Inter vivos

An owner may order the disposal of his property during his lifetime and this may be allowed by the Lands Court if it is disposed of in accordance with the Lands Code. The owner's order may be altered or overruled if:

- any of his children or next of kin who are not guilty of neglect would suffer hardship; or
- if the shares of the next of kin are grossly unfair.

The Land Court must first obtain the opinion of the other children or next-of-kin before approving the distribution or gift. Only in five of the islands (Nanumea, Nui, Vaitupu, Funafuti, Nukulaelae) is a testator permitted to stipulate that his estate may not be divided, and his wishes must be upheld during the lifetime of his natural children. The estate may only be divided when all the natural children have died. In Funafuti, an owner may not distribute or give away his land held Kaitasi without the consent of other members of the Kaitasi (Code 4).

4.7.2 Provision for Wife

If a husband and wife have lived together continuously for three years after the marriage preceding the husband's death, adequate provision must be made for the wife during her lifetime. On her death or remarriage, the lands and pits given for her support must revert to the husband's family if there are no children to their marriage (Code 14).

4.7.3 Gifts

An owner has complete authority over the disposal of any land he has:

- received as a reward for his work;
- bought or received in exchange for a canoe or anything else; or
- received as an unreturnable land gift.

If the owner dies childless, has no brothers or sisters and is intestate (i.e. dies without making a will), then the lands will be distributed to his paternal next of kin (s. 3(iii)). If the owner has received a gift which must revert to the donor's family, then he is prevented from giving away the property if he or his "issue dies issueless" (s. 3(iv)). Members of the different descent lines from the owners are entitled to use land through special gifting arrangements.

Gifts for Nursing

Land gifts for special services given to a landowner are dealt with in the Lands Code. Land can be granted in return for kind deeds done by a stranger for a landholder particularly if he is elderly and/or sick. "A gift for nursing" can only be made by will and must be confirmed by the Lands Court. The Lands Court has the discretion to make grants if it is satisfied that the owner died intestate because he was prevented or incapable of making a will. A gift for nursing will not exceed one land and one pit if the donor's family nurses

him. If a stranger nurses him or only one member of his family nurses him then the gift may be increased. There is no gift for nursing if the owner is in hospital. A husband and wife may give each other one land and/or one pit as a gift for nursing if they are not nursed by their children or next of kin. There is some variation to this arrangement in Vaitupu where the gift for nursing returns to the donor's family at the death of the recipient. In Nanumaga and Niutao, even if the recipient has no children, gifts for nursing do not return to the donor's family. In Nukulaelae, Nukufetau, Niu, Nanumea and Vaitupu, the gift does not return if the recipient has children. In Funafuti, the gift returns to the donor's family on the death of the recipient (Code 5).

Gifts for Kindness

According to Pasefika (1988: 9) a gift for kindness is an old-time custom where land is given for kind deeds to an old man or a family. In most cases, the person to whom the land is given is not kin, but a person who has lived with the donor for some time. On returning to his own family, he takes the land rights with him. The land is thus transferred from one family to another.

An owner is free to give a gift for kindness, but the gift will not be approved by the Lands Court if the gift is large and it will result in hardship for the donor's next of kin. Gifting variations exist in the various islands. In Nui, the gift is limited to 1 land and 1 pit and the reversion (i.e. the interest remaining in the donor) to the donor's family is dependent on whether the recipient has children. In some cases, the gift will never return to the donor's family even if the recipient is childless, but in other situations the gift will revert only if the recipient is childless. In Vaitupu, any conditions made relating to the gift must be registered with the Lands Court. In Funafuti, a gift for kindness is a gift given during the lifetime of the recipient and will only revert to the donor's family on the death of the recipient (Code 6).

Gifts for Adoption

In the past, the adoption of children was very common but nowadays there are only occasional adoptions. In Funafuti the average number of legal adoptions per year is about three or less. Pasefika comments that perhaps one reason for the low adoption rates is that all adoptions must be administered before the Lands Court and most lands dispersed through adoption cannot be recovered by their former rightful owners (1988: 7). Under the Lands Code, gifts to an adopted child will revert to the donor's family only if the recipient dies childless. But if the recipient has children, the donor loses his reversionary right and it is immaterial if his children are later childless (Code 7).

4.7.4 Wills

Disposal of property by an owner's will can only be allowed by the Lands Court if it is in accordance with the Lands Code (Code 8). According to Pasefika (1988: 6), it is wrong for the head of the family to decide land matters by himself because when the head of the family dies, a new leader is chosen by those "who live and eat together on their subdivisational lands". He further states that today no-one can make a will about lands which are family property but only land which belongs personally to that person making the will.

Where there is no will the estate will be distributed in accordance with the Lands Code. The will of an intestate owner will only be settled by his next of kin if they can agree upon the distribution and the approval of the Lands Court is obtained. But if no agreement can be reached, then the estate will be divided as follows:

- (i) if the owner has more than one spouse, the eldest son or the eldest daughter (where there are no sons) of the first spouse will be the administrator. The children of the first spouse will receive more lands than the children of the subsequent spouses. But if any of the children are likely to suffer hardship by this distribution, the Lands Court will distribute the lands irrespective of which category of land they are from;
- (ii) in the distribution of an estate between sons and daughters, the eldest son or the eldest daughter, as the case may be, will take the larger share. This formula does not apply in Vaitupu where the landowner may distribute his estate between his sons and daughters in whatever proportion he wishes, provided the Land Court is satisfied that adequate provision is made for the children;
- (iii) a mother and father may jointly distribute their joint estate with the approval of the Lands Court.

When an owner has no children and dies intestate or his will is not in conformity with the Lands Code, the distribution of the estate will be made by the Lands Court in such a manner that the land is not fragmented or subdivided. If there is insufficient land for distribution to all the owner's next of kin, then only those with small shares from a previous distribution will receive shares. Men and women will share equally in such an estate. The Lands Code prescribes in detail the formula for the distribution of land to the next of kin (Code 9 (iv)(a)). The Lands Code further provides that the Lands Court should, if possible, refuse to subdivide a land block when distributing an estate. Land blocks should be distributed undivided as in this way the next of kin who receives small plots of land will receive a larger share (Code 9(vi)).

4.8 Absentee Landowners

Leupena and Lutelu (1987:159) point out that as people travel more, problems of neglected land and absentee ownership increase. The extent of the problem was not realised until a recent census revealed the number of Tuvaluans who had emigrated. Contract employment in Nauru has claimed, at one time or another, about 25 per cent of Tuvalu men and about 20 per cent are on contract work with German shipping companies as seamen. Some Tuvaluans have migrated to Kiribati and there is inter-island migration within Tuvalu itself.

An absentee landowner may lose his land to his next of kin if he has lived away from his island for 15 years. If the Lands Court is satisfied that neither the owner nor the owner's children will return to the island, then the estate will be distributed to the next of kin who live on the island (Code 10(1)). This provision does not apply to Funafuti (Code 10(ii)).

4.9 Exchanges of Property

Landowners may exchange their land but only with the approval of the Lands Court. The Lands Court will not permit an exchange if there is a great difference in the value of the properties to be exchanged. Exchanges of pits will be governed by the same rules and the line of inheritance will be that of the land which has been given away (Code 11). According to Pasefika (1988: 8) there was only one case of exchange of land recorded in Funafuti in 1985; the average figure for Tuvalu may be in the order of three per year.

4.10 Sale of Property

An owner is permitted to sell a plot of land or a pit provided the approval of his next of kin and the Lands Court is obtained first. The Court's decision will depend on whether the owner's remaining land after the sale is sufficient to support himself and his children. This provision does not apply to Nanumea, Nukufetau and Funafuti where the sale of lands or pits for cash or other consideration is forbidden, but they may be exchanged or leased (Code 12). Pasefika (1988: 9) states that "sometime ago the old native (local) government requested the central government to stop the purchase of lands with money or any other form of payment. This was because of the increased population and to avoid the flow of lands to other people. The government agreed to this request".

4.11 Natural Accretions

If land accretes naturally from an owner's land towards the sea then the accretion belongs to the landowner. Any accretion which does not adjoin existing land belongs to the Government, and the Lands Court may give it to any indigent person (i.e. a person who has insufficient land to support himself and his children). Confirmation of ownership is dependent on cultivating and planting the land: the Lands Court can reassign it to another indigent person if neglect of the land is proved (Code 13).

4.12 Conclusion

Leupena and Lutelu (1987: 165) point out that a Tuvaluan values his piece of land more than any of his other possessions. His security is entirely in his land and pulaka pits. They observe, however, that the basic Tuvaluan notion of community sharing of land by component groups of relatives is slowly changing, with adaptation and modernisation to a notion of individual property rights. Subdivision on inheritance has greatly fragmented landholdings and disputes over land boundaries and multiple ownership are common, resulting in the newer notion of the household as the most common landholding unit. The fragmentation and shortage of land and the reluctance of landowners to sell, lease or transfer rights has led to increased land disputes and difficulties with development projects.

Note: The writings of Pasefika (1988) and Leupena and Lutelu (1987) have been used to guide the writing of this chapter. For more detail see these references.

5 Physical Planning And Assessment

5.1 Introduction

In the Tuvalu National Development Plan IV: 1988–1991 (DP IV), the following development objectives and strategies for physical infrastructure development are set out for the planning period:

- to maximise the development potential of the land and its resources;
- to control coastal erosion and protect the land against encroachment from the sea; and
- to reclaim land where possible, and where it will not cause greater environmental damage.

DP IV further spells out the Government's aim for land management, environment and conservation in the following words:

The Government's aim is to bring about improved land management and environmental control through better utilisation of the country's very scarce land and environmental resources. One of the specific aims during the planned period will be to:

maximise the development potential of the land and its resources, while recognising the rights of customary ownership of the land (p. 243).

Tuvalu comprises nine islands and has an estimated population of 9,250, of whom 3,000 reside in the capital Funafuti. The total land area of the country is approximately 24.4 sq km. All the islands are low coral formations seldom rising more than four metres above sea level. Five of the islands – Nukufetau, Nanumea, Nui, Funafuti and Nukulaelae – are true coral atolls with a continuous eroded reef platform surrounding a central lagoon. Nanumaga, Nuitao and Niulakita are single islets composed of sand and coral material thrown up by wind and wave action and all have small internal salt lakes. Vaitupu, the largest island in Tuvalu, is described as intermediate in character between an atoll and reef island and has a large land-locked central lagoon (Government of Tuvalu 1991: 243–244).

The islands, splayed over a 1.2 million sq km expanse of ocean, concentrate their population in isolated village communities where planning is an age-old activity. During the colonial era, the centre for administration, generally located on Funafuti, attracted the flow of population from the outer islands for employment, education and commerce. The traditional communities surrounding the centre of administration were affected by the substantial increases of population, greatly altering the physical appearance of the villages.

There were no land use planning laws, in the sense of town and country planning laws, to regulate and control the dramatic development of land use, buildings, conveniences, amenities and small-scale business ventures during the colonial period. One of the major constraints then and now in promulgating land use planning laws is that most of the land is privately owned by Tuvaluans. The lack of control over the types of construction and sanitation raised general concern for health matters and the Local Councils were given authority to secure the proper development of settlements, housing, sanitation and drainage,

which could restrict the individual's use of his private property. These controls were basic to the national interest and introduced concepts of planning in areas recognised and designated for urban development. Local Councils (there are eight at present) have been given substantial powers in the fields of public health and housing, and subsequent amendments to the law have expanded their role to include planning to regulate and control the use of land and the development of buildings.

5.2 Planning Authority

Although the Local Government Ordinance does not create a planning authority, Local Councils are given wide powers to enable them to act for all intents and purposes as planning authorities. Allocating physical planning functions to Local Councils is a common trend as local entities are more familiar with the local environment and growth patterns. In Tuvalu, the Local Government Ordinance provides Local Councils with the following physical planning functions (s. 2):

- (a) regulating and controlling the erection and construction, demolition, re-erection and reconstruction, conversion and re-conversion, alteration, repair, sanitation and ventilation of public and private buildings and structures;
- (b) providing for building lines and layout of buildings;
- (c) preparing and undertaking or otherwise controlling schemes for improved housing layout and settlements;
- (d) prescribing the conditions to be satisfied by a site for any building or for any class of building;
- (e) prohibiting the construction of any new building unless and until the approval of the Council has been obtained;
- (f) providing for the demolition of dangerous buildings and for the recovery of any expenses incurred in connection therewith;
- (g) regulating advertising structures.

Under Schedule 3 section 12(e), provision is made for the establishment, control and management of recreation grounds, open spaces and parks.

Local Councils are authorised to prepare schemes for improved housing layout and settlement, although the Local Government Ordinance does not provide details of how this is to be achieved. The whole system of planning does, however, depend on the definition of development. "Development" is not defined in the Local Government Ordinance, but for planning purposes, if a particular operation or change of use involves development, it will require planning permission. Local Councils can prescribe the conditions for the development of a site for a building or class of buildings, but it was not possible, due to time constraints during the Review, to ascertain what these conditions entailed.

5.3 Other Planning Functions

The Local Government Ordinance provides a basic framework for planning law as it gives Local Councils a number of planning functions, such as the preparation and the control of schemes for improved housing layouts and settlements, and controls over the construction of buildings. The Ordinance also introduces a system of structure plans in regulating new buildings and providing for building lines and the layout of buildings. It also gives powers to control traffic, to make and maintain roads, causeways, wharves, jetties and aerodromes, to provide for lighting in public places and to maintain an electricity supply (Sch. 3(10)).

All these functions incorporate the positive aspects of planning which are designed to improve the environment and manage the development of a community, town or settlement in an orderly way. The requirement of planning permission is the key to the whole system of regulatory planning as the Council could prohibit the construction of any new building unless and until its approval has been obtained. The Local Council also has power to require the removal or alteration of existing buildings and uses.

Schedule 3, section 11 of the Local Government Ordinance plainly regulates and controls trade and industrial development. For example, one of the functions of the Council is to prescribe the conditions under which any offensive trade or industry may be carried on, as well as regulating all places of entertainment, recreation, lodging, eating houses and any premises in which any profession, trade or business is carried on. It is possible that conditions imposed by the Council could restrict land uses in certain areas, for reasons of public health, safety and general welfare of the community, for example noxious trades. Viewed in this light, section 11 upholds the Council's rights to interfere with the landowner's uses of his land and could broadly appear to meet the test for zoning for specific land uses.

The Council's functions also extend to special forms of control. One of the objects of planning is to preserve and enhance special features of a town or settlement and the surrounding environment, and this can be partly achieved through the control of development. Schedule 3 of the Local Government Ordinance deals with the establishment, control and management of recreation grounds, open spaces and parks and enables Councils to protect, preserve, prohibit or control the removal from any place of any antique artefact (s. 12(d)(e)). The Council could refuse permission for development or attach conditions if any development is detrimental to amenities. To preserve the pleasant features of the environment, the Council also has functions to regulate or prohibit the planting, cutting or destruction of trees or vegetation growing along any street, road or public place (Sch. ((10)(j))).

These council functions, if fully implemented, would allow the implementation of desired land use planning goals despite the lack of a comprehensive physical planning legislative framework and zoning laws. Pressured by population growth and budgetary constraints, Local Councils have enormous responsibilities to expand and tailor environmental programmes to meet the specific needs of individual islands. Local management plans addressing traditional land use concerns such as subdivisions and the allocation of land resources are an important tool for orderly development and could be of great benefit to the community, particularly with central government oversight. Local plans, however, must be

continually scrutinised to ensure that advances made for development purposes are balanced with environmental protection and the protection of landowner rights.

5.4 Other Laws Affecting Land Use

In countries where land is in short supply and most of the land is privately owned, the enactment of any land use planning law is often met with resistance from landowners. Governments confronted with the reality of their own environment are also aware that any land use planning legislation would regulate, and could restrict, the use of land, which inevitably affects an individual's or family's property rights. Thus there is some reluctance to bring in direct land use planning laws because of this special concern for citizens who could be directly affected by such laws.

At the same time, Governments are aware that there is a limited supply of fertile land, mineral wealth, water and other resources for the needs of a growing population, and that regulation and control of land use and development to foster a nation's well-being is an inevitable process. Thus, constrained by these difficulties, some Governments have taken different approaches to land use planning for development purposes. In Tuvalu, the approach has been:

- (a) through leasing agreements with landowners;
- (b) the acquisition of land for public purposes through the *Crown Acquisition of Lands Ordinance 1954*;
- (c) the reclamation of land under the Foreshore and Land Reclamation Ordinance. The foreshore, (i.e. the area between low and high tides) belongs to the Crown subject to any registered private rights (s. 3). Under the Local Government Ordinance, one of the functions of Council is to engage in and to promote the reclamation of land from the sea. Land reclamation of borrow pits and foreshore areas for development, where technically and economically feasible, has been under active consideration in Tuvalu.

The Government does not have available Crown lands for development purposes but is able to lease land from landowners or acquire land for public purposes under the Crown Acquisition of Lands Ordinance. Apart from this, although most of the land in Tuvalu is privately owned by Tuvaluans, there are some communal lands which are owned by Local Councils in some of the islands (see chapter 4).

It is possible through these approaches to allocate land for different development purposes and to relieve congestion from overpopulation in specific areas, thus allowing residential and other developments to take place whilst planning for and safeguarding amenities and the environment.

5.5 Acquisition of Land for Public Purpose

The Crown Acquisition of Lands Ordinance gives the Minister power to acquire any land required for any public purpose absolutely or for a term of years (s. 5). Under the Ordinance, public purpose means (s. 2):

- (a) for exclusive Government or for general public use;
- (b) for or in connection with the laying out, the extension or improvement of any new or existing township, Government station or Government housing scheme;
- (c) for sanitary improvements;
- (d) for obtaining control over land contiguous to any port, railways, roads or other public works of convenience, constructed or about to be undertaken by Government; and
- (e) for any other public purpose deemed by the Minister.

The Ordinance prescribes the notices required for the taking of lands (ss. 5, 6) and any dispute over compensation is determined by the High Court (s.8). Two major acquisitions made on Funafuti were land required for the airfield and land required for a new settlement area to accommodate the first batch of civil servants who were offered employment by the Government of Tuvalu after separation from Kiribati in 1976.

5.6 Acquisition by Lease Agreements

While Government can legally acquire land for public purposes, it is the policy of the Government when dealing with customary land to conduct direct negotiations with landowners and secure land by way of lease agreements.

A Government Land Use Committee was established in 1980. This is only concerned with land leased by Government and it negotiates directly with landowners to acquire land for development. Government also sub-lets land which it has leased, to enable other developments such as residential housing and industry, for example the clothing and biscuit factory. It is understood that some developers have found it cheaper to sub-lease land from the Government rather than from landowners as there are no controls on the rental for leased land.

No lease or sub-lease of any native land is valid until the Lands Court of the particular island has confirmed to the Minister that:

- (a) the land is the property of the lessor;
- (b) the lessor is not prohibited under the Lands Code from alienating the land for the term proposed;
- (c) the lessor will be left with sufficient land to support himself and his dependants.

In approving the leases, the Minister must also be satisfied that the terms of the lease are not manifestly to the disadvantage of either party and that the Agreement conforms with the requirements made under section 63 concerning fees.

5.7 Compensation

In addition to the annual rents, government has to pay a lump sum compensation at the commencement of the lease, for the loss of trees and standing crops. The assessment and counting of trees is done by the Land Use Committee.

5.8 Neglected Lands

The *Neglected Lands Ordinance 1959* does not entitle Government to acquire land for its own use, but it does empower Government to take any land and redistribute it to the needy. Such a provision could be a useful tool in Government hands but it is understood that this Ordinance has rarely been used. It is discussed in detail in Chapter 6.

5.9 Laws Affecting Development

5.9.1 Land Use and Air Navigation Aids

Under section 4(3) of the *Aerodromes and Air Navigation Aids Ordinance 1968* the “use of land for or in connection with the establishment or maintenance of air navigation aids is a public purpose for the purposes of the Crown Acquisition of Lands Ordinance”.

Under the *Aerodromes and Air Navigation Aids Ordinance*, to secure the safety and efficient operation of any air navigation aid, the Minister responsible may by order prohibit absolutely or conditionally or regulate the erection of any structures above a certain height, and the planting of any trees or other high-growing vegetation within a controlled area (s. 6(1)). A “controlled area” is defined as an area that must be cleared of obstructions for the safety of, and for securing the efficient operation of, any air navigation aid. Such an area can only be declared by the Minister responsible (s. 5).

The Minister may also serve a written notice on the owner or the occupier of land (s. 7(1)):

- to remove or reduce the height of any structure, tree or high growing vegetation on such land if above the specified height in the order; and
- to take steps to alter any structure, tree or other high-growing vegetation on any land within a controlled area.

If anyone is in default of the written notice, the Minister may authorise an officer to take action, and any costs incurred can be recovered as a civil debt from the person in default (s. 7(2)).

No damages or compensation will be paid by the government except in accordance with section 9 (s. 9(1),(4)). In situations where a controlled area has been declared or where an order is made prohibiting or restricting the landowner or occupier from erecting any structure on his land, the landowner or occupier is entitled to be compensated for any depreciation of the value of his land (s. 9(2)).

Where any structure or valuable tree or plant is removed, altered or reduced in height or where any expenses have been reasonably incurred in compliance with the requirements of any written notice under section (s. 7(1)), the person suffering any loss or damage shall be compensated. No compensation is payable for any loss or damage suffered or any expense incurred in consequence of the removal, alteration, reduction in height of any structure, tree or vegetation which has been erected or planted in contravention of an order or condition imposed in the notice (s. 9(3)).

Anyone who erects structures and plants trees in contravention of any order issued under s.6, and anyone who obstructs authorised officers, can be found guilty of an offence and liable to a fine of \$200 or 6 months' imprisonment (s. 12).

5.9.2 Land Use and Electricity Supply

Under the *Tuvalu Electricity Authority Corporation Act 1990* the Minister responsible is given power to declare by notice an area to be an electricity supply area on the advice of the Board of Directors (s. 5). The Corporation is given power under the Act to enter, cut and remove from any land: earth, stone, soil, gravel and any tree or timber suitable for the construction, maintenance or alteration of any works in connection with the supply of electricity (s. 7(1)(a)). The Corporation can also erect and maintain on any land such works, posts, staywires, poles or pillars and lay, attach and place under or over the land any wires, appliances or things necessary for the supply of electricity (s. 7(1)(b)); and cut and remove any tree or vegetation from any land that is likely to affect or interfere with the safe and efficient supply of electricity (s. 7(1)(c)). The Corporation is empowered to break open any road, provided that the road is repaired and relaid by the Corporation when the necessary work has been completed (s. 7(1)(d)); and have lamp-post, lamp-irons, insulating material, brackets or other apparatus fixed upon any land in such places and in such manner as may be required (s. 7(1)(e)). Before doing any of these things, the Corporation is required to give seven days' notice to the property owner stating its intention to carry out works in connection with the supply of electricity (s. 7(2)). Within seven days of the receipt of the notice, any landowner aggrieved by the Corporation's decision may appeal to the Minister, whose decision shall be final (s. 7(3)).

In the exercise of the powers given by section 7, the Corporation must do as little damage as possible as it is required to pay compensation for any damage or loss sustained by the landowner. No compensation however will be paid for maintaining or repairing the electricity supply system if compensation has been paid for installing the system (s. 29(1)).

5.10 Controls over the Littoral Zone

The various problems associated with the foreshore and coastal environment were discussed at the NEMS Workshop in Funafuti on 9 November 1993. Concern was expressed about erosion on the foreshore caused by westerly winds between November and April, sand and coral dredging, the lack of sea wall protection in certain exposed areas, development projects sited close to the shoreline and coastal pollution. Concern over the coastal environment is not new, but the effort to devise a framework to preserve the overall integrity of the area is recent.

The special problems associated with development and excavation in the littoral zone are recognised in the *Foreshore and Land Reclamation Ordinance 1969*, as amended. Under this Ordinance, ownership of the foreshore and the seabed (subject to any public rights of navigation, fishing and access, and any other private rights that may exist) is vested in the Crown (s. 3(1)). The Ordinance prohibits the removal of sand, gravel, reef mud, coral and other similar substances from the foreshore in any part of Tuvalu without a licence from the Island Council (s. 3(2)). The Council may incorporate in the licence any conditions considered necessary, including environmental conditions (s.3(3)). As the environmental and ecological problems associated with foreshore excavations are significant, the licensing system represents an ideal opportunity for making environmental conditions, including environmental impact assessment (EIA), part of the licence conditions.

The Ordinance also empowers the Minister responsible to reclaim foreshore land or the seabed, irrespective of the ownership of land bordering these areas (s. 4). The procedure to reclaim land is set out in detail in section 4 and provides for public notification and objections to be lodged by those whose rights are affected. The procedures set out in section 4 do not apply to the construction of causeways or landing places undertaken by government or Local Government Councils (s. 5). Once the proposed reclamation, construction of causeway or landing place has been authorised and published, all public and private rights of navigation or fishing and other ancillary rights, access or user rights over the area are extinguished and cease to exist (s.6).

Any land reclaimed by Government vests in the Crown ((s. 9(1)) and any causeway or landing place constructed by a Local Government Council vests in that Council, subject to the right of the Minister to call for their surrender to the Crown (s.9(2)). Section 10 of the Ordinance empowers the Minister to enter into an agreement with any person for the sale, lease or grant of any other rights over the reclaimed land or other works. The grant of a licence to erect boat sheds, wharves or landing places in harbours under section 28 of the *Harbours Ordinance 1957* is not affected by the *Foreshore and Land Reclamation Ordinance* (s. 12).

The relationship between negative environmental effects and foreshore and seabed excavations and reclamations needs to be given particular attention by those who issue licences and those involved in such projects in order to avoid or reduce the adverse effects of these activities on the environment. It is suggested that EIA guidelines be established to assist Island Councils and to assist them to incorporate environmental considerations into their licensing programme.

5.11 Land Use Resources Survey

In 1981 the United Nations engaged the University of Auckland to undertake a Land Use Resources Survey of Tuvalu. This was designed to provide adequate information for planning and future land use and to allow for a proper assessment of land capability, showing the suitability of land for particular uses and especially for agricultural purposes (Government of Tuvalu 1991: p. 245).

Laupena and Lutelu (1987) state:

the Cadastral Survey Team started field work in May 1981 and completion was originally due in December 1984 but due to prevailing uncertainties the team was not able to complete the work and it is now due for completion in 1986. The total number of individual land plots to be surveyed throughout Tuvalu is approximately 14,000. To the end of 1984 about 3,500 plots had been surveyed.

It was not possible to obtain a copy of the Land Use Resources Survey at the time of the Review and the NEMS Workshop.

5.12 Conclusion

Although this chapter describes the laws that have some impact on land use and development, some assessment needs to be made of the capacity of these existing laws to bring about a land use planning result without directly enacting comprehensive framework land use planning legislation. The Local Government Ordinance, however, covers a good proportion of all aspects of land use planning and the potential of this law and its capabilities should not be overlooked.

Environmental impact assessment (EIA) has become a necessary tool to regulate and control development. With the rise of environmental awareness, closer supervision of all land uses becomes inevitable. In any further amendment to the Local Government Ordinance, it is recommended that some consideration be given to including specific EIA requirements as part of the Council's functions, rather than depending on the discretion of Local Councils to include such requirements as part of the range of conditions they can legally impose. Local Councils must also be provided with the necessary expertise to develop and implement their land use planning and development functions.

A number of strategies could be investigated with a view to meeting the physical planning objectives in island States critically constrained by limited land resources and complex land tenure systems. The potential of leases and sub-leases, for example, to meet planning objectives merits further investigation.

5.13 Recommendations

1. Consideration of environmental impact should become as much a part of government decision-making processes at both the national and local levels as social and economic benefit.
2. Although detailed land use planning functions should rest with local authorities, it is essential that the overall responsibility for land use and physical planning policies remains with the national Government.
3. Consideration should be given to consolidating planning functions into distinct planning legislation. This should contain provisions for heritage protection and environmental assessment of particular development proposals.

6 Agriculture

6.1 Introduction

The agricultural sector plays a significant role in the everyday life of the majority of Tuvaluans, but the limited land available and poor soil fertility in Tuvalu restricts the capacity to support agriculture. Much of the land is very sandy with a high pH level (the level of soil acidity), which locks up nutrients in the soil. Agricultural production is limited to coconuts, pandanus, breadfruit and bananas, the predominant tree crops. Pulaka pits are constructed to allow the cultivation of traditional root crops. Agriculture is also affected by climatic changes. Although there is a uniform temperature of 25° to 32° there is high humidity and heavy rainfall, averaging 3064 millimetres per annum. Droughts lasting up to three months can occur, especially in the northernmost islands. Some of the islands lie within the hurricane belt. In 1972 Tuvalu was struck by a hurricane which devastated Funafuti; high wind damage was also recorded in 1985 and 1987 (Government of Tuvalu 1991: 47).

Not only is the scarcity of good arable land a major constraint to agricultural development but the complex land tenure system in which land is “owned communally and so tends to be broken down into minuscule plots as families expand” (Government of Tuvalu 1994: 98) is also a contributing factor. Government policy to rationalise land use, rejuvenate abandoned pulaka pits and reclaim borrow pits is designed to increase agricultural productivity and introduce an integrated cropping system.

Under the *Neglected Lands Ordinance 1959*, as amended, the Minister responsible for agriculture may purchase by agreement with the owner any land considered to be neglected (s. 3) or compulsorily acquire neglected land “for sale to indigent natives or for alienation by sale or gift to a Local Government Council” (s. 4). Neglected land is defined in the Ordinance to mean land suitable for agricultural use which is not being fully and efficiently utilised for agricultural purposes (s. 2). Brady (1974) states that not many landowners understand this legislation – some gave the impression of believing that the Government may arbitrarily take land whether it was actually neglected or not. The presence of this legislation had a coercive effect on several landholders, inducing them to improve the quality of their land, but lack of enforcement reduced its impact.

The main commercial export crop is copra. Copra exports, however, have fallen considerably in the last decade. Coconut palms are one of the most valued trees in Pacific island societies. Coconuts are used for drinking, food, and for a variety of other by-products such as desiccated coconut. The Agriculture Department has been involved in coconut replanting schemes with mixed success. The problems identified by the Department include difficulties in producing a coconut specifically suitable for Tuvalu. Cross-breeding of palms between the local tall, the Malay dwarfs and the Rennell tall has been carried out to produce a hybrid variety that is a good producer and has the ability to withstand the poor soil conditions. The other difficulty identified is the complex land tenure system, as there could be as many as four or more landowners to five acres of land, which substantially confines the coconut planting schemes to smaller plots, severely restricting their development.

Poultry, eggs, sweet potatoes, taro and some green vegetables are sold locally in the markets. Livestock production is limited to pigs and poultry but a major problem faced by this industry is the prohibitive costs of imported feed. The damage to the soil and root crops caused by pigs, particularly in a free-range system, and the potential hazards to health, have caused the Agriculture Department to actively encourage farmers to adopt a pig pen system. Goats were introduced to provide an alternative protein source but “they have proved unpopular as livestock for Tuvaluan farmers as neither the meat nor the milk were highly valued. There were significant management problems associated with the husbandry of grazing animals with which Tuvaluans are not familiar” (Government of Tuvalu 1991: 99). A small bee-keeping project on Vaitupu has proved to be technically feasible but the acceptance of honey as a new food by the community will take time.

6.2 *Importation of Animals*

The importation of animals is regulated by the *Importation of Animals Ordinance 1919*, as amended. Under the Ordinance, “animals” are defined to include birds, reptiles, fish and their young, eggs and the carcasses of these animals (s. 2).

As imported animals could harbour pests and diseases that would affect the animal life and vegetation in Tuvalu, the importation of animals and animal litter and fodder, the methods of conveyance and ports of entry are strictly regulated under the Ordinance.

The Minister responsible for agriculture can by notice restrict or absolutely prohibit for any specified time the importation of any animals, carcasses, or eggs in a treated or processed state from any country in which there is reason to believe that infectious or contagious diseases in animals exist (s. 10).

The Minister is empowered under section 3 of the Ordinance to make regulations by prescribing the ports through which animals are to be landed, and the inspection and condition of slaughter of animals in a defined part of a port. Section 3 also regulates the seizure, quarantine and destruction of any imported animal, carcass, fodder, litter and dung, and the treatment of animals.

Under the *Importation of Animals Regulations*, the importation of animals, manure, fodder, litter, fittings or other things that have come into contact with any animal is absolutely prohibited except as provided for by the regulations. The regulations do not apply to commercially manufactured carcasses which have been properly sterilised or carcasses imported from a country where live animals are permitted to be imported by the regulations (cl. 3). The port of Funafuti is the only port through which imported animals can be landed (s. 4).

6.3 *Countries from which Animals may be Imported*

Horses, asses or mules may be introduced into Tuvalu from Fiji, New Zealand, New South Wales, Victoria, South Australia, Tasmania and the United Kingdom, but strict controls apply and certification is necessary to confirm that the animal has been free of disease during the six months preceding the date of shipment. A certificate from an official

veterinarian is also necessary, certifying that an examination has been conducted within seven days prior to the date of shipment and the animals have been found to be free of vermin and disease. Animals imported from the United Kingdom require a certificate confirming that a Mallein test has been applied on the animals within 30 days of shipment and the tests show a negative result (cl. 7).

Cattle, sheep, goats and swine may also be introduced from New Zealand, Fiji, Tasmania, New South Wales, Victoria, South Australia and the United States of America (cl. 8). Domesticated poultry may be imported from Fiji or New Zealand (cl. 12(b)) and day-old chicks from Australia, Fiji and New Zealand (cl. 12(a)). Poultry carcasses or eggs, provided they are properly sterilised and hermetically sealed, can be imported from any country, except China and Hong Kong.

6.4 Agricultural Functions of Local Councils

The *Local Government Ordinance 1966* Schedule 3 extends the functions of Councils to regulating agriculture and livestock. The functions include:

- (a) to provide services for the improvement of agriculture;
- (b) to control plant diseases weeds and pests;
- (c) to control or exterminate insect, animal or other pests detrimental to crops;
- (d) to control methods of husbandry;
- (e) to regulate areas and methods of planting and types of crops and trees;
- (f) to provide services for the improvement of livestock;
- (g) to prohibit, restrict or regulate the movement of livestock in or through the council area;
- (h) to prohibit, restrict and regulate the keeping of livestock of any description;
- (i) to establish, maintain and control pounds, seize and impound any stray animal, and provide for the payment of compensation for damage done by such animal;
- (k) to establish, erect, maintain and control slaughter houses;
- (m) to prevent and control the outbreak or the prevalence of any disease among animals.

6.5 Disease Prevention

The *Livestock Diseases Act 1984* was promulgated to control the spread of disease amongst livestock and poultry and to prevent the infection of newly established commercial ventures. The Act empowers agricultural officers to regularly inspect all animals and poultry, isolate them during the outbreak of diseases and order the destruction of diseased animals. Compensation is paid to owners where infected animals have been destroyed (s. 2).

6.6 Protection of Plants

The *Plants Ordinance 1977* provides for the protection of plants within Tuvalu and controls the importation of plants. As agriculture is vulnerable to the introduction of pests and plant diseases from the outside, the Minister may by order prohibit the importation into Tuvalu of any plant either absolutely or permit importation under specified conditions (s. 4). An offence is created and a person is liable to a \$1000 fine and 12 months' imprisonment for the importation of prohibited plants or for contravention of the restrictions applying to the

importation of plants (s. 4(2)). The Prohibition of Plants Importation Order (L.N. 7/77, 9/79) specifies the plant species from certain countries which are prohibited imports into Tuvalu.

The Plants Ordinance also restricts the importation of earth unless specifically permitted by the Agricultural Officer (s. 8). Quarantine officers are also given power under this Ordinance to inspect vessels and aircraft entering Tuvalu and to examine any box or container carried; to search any baggage of passengers entering Tuvalu, and to fumigate and treat any baggage suspected of being exposed to infection by any plant disease or pest (s. 9).

The Minister has the power to declare any area within Tuvalu to be an infected area and prohibit the movement of any plant material within or out of the area (s. 11). The Plants (Prevention of Disease and Pests) Regulations prescribe in detail the measures to be taken in infected areas to prevent the spread of plant pests and diseases and to restrict the movement of infected plants and materials. They give power to quarantine officers to remove and destroy infected plants. The Minister may also make regulations prescribing compensation to be paid to owners for the destruction and removal of plant material (s. 13). The Government is not liable for any loss or damage (s. 17).

Any person who contravenes the provisions of the Ordinance or any Order or Regulations or refuses or neglects to carry out any condition is liable to a \$500 fine and to 6 months' imprisonment unless another penalty is provided for elsewhere in the Ordinance (s. 16).

6.7 Pesticides

The toxic properties that make pesticides valuable commodities as pesticides frequently pose potential threats to man and the environment. The *Pesticides Act 1990* controls the importation and use of pesticides. Pesticide is defined under the Act (s.2) to mean any substance or mixture of substances used or intended for use:

- (a) to prevent, control or destroy any pest; or
- (b) to regulate plant growth, or as a defoliant or desiccant or as an agent for thinning or preventing the premature fall of fruit; or
- (c) by application before or after harvest, to preserve crops from deterioration in their condition during storage or transport; or
- (d) any such substance or mixture of substances declared by the Minister under section 7(3) to be a pesticide.

Under section 7(3) the Minister may from time to time on the advice of the Pesticides Committee by order declare that any substance or mixture or class of substances is deemed to be a pesticide by its common or trade name, by a description of the class or by its toxicological action, its use or intended purpose.

The Act provides for a Pesticides Committee, which comprises the Agricultural Officer, who is the Chairman, the Public Health Officer appointed by the Senior Medical Officer and a representative of pesticide importers, suppliers and users appointed by the Minister (s. 5). An Office of the Registrar of Pesticides is also provided for by the Ordinance. The Agricultural Officer is the Registrar of Pesticides. The duties of the Registrar are to maintain a Register of Pesticides and to regulate the importation of pesticides (s. 4). The Minister is also empowered to appoint inspectors to enforce the provisions of the Act or any regulations or conditions made under it. Inspectors are empowered to enter any land or premises of an importer, seller, supplier or user of pesticides for inspection purposes, and to seize for preservation purposes any pesticide imported, sold or used in contravention of the Act (s. 6).

6.7.1 Role of the Pesticides Committee

The role of the Pesticides Committee is to assess the application made to the Registrar for registration of a pesticide and direct that the pesticide may be registered for a period not exceeding five years and determine "such conditions as to import, transport, storage, distribution, sale, supply, use and disposal" (s. 8(1)(a)). The Pesticides Committee may also defer consideration of the application pending sufficient information from the applicant or decline the application altogether (s. 8(1)(b)(c)). Where the Pesticides Committee considers that there is no need for the pesticide in Tuvalu; or the continued use of the registered pesticide is ineffective; or the use of a pesticide would give rise to an unacceptable hazard to the people or the environment of Tuvalu, the pesticide application will be denied, or, in the case of a registered pesticide, the registration will be cancelled or suspended (s. 8(2)). The law makes it clear that previously registered pesticides should not pose any greater risks than newer pesticides. Older pesticides are expected to meet the current standards expected for the registration of new pesticides.

The Pesticides Committee can also direct that pesticides be kept in an approved container with an approved label affixed to the container (s. 8(3)). Section 8(4) directs the Pesticides Committee to promote the efficient, prudent and safe use of pesticides, to advise the Minister accordingly and, with the Minister's approval, to issue guidelines to the public. The Minister may also, on the advice of the Pesticides Committee, exempt by notice any pesticide from all or any of the provisions of the Pesticides Act and in the same way revoke any exemption (s. 13).

Interviews conducted during this Review indicate that there is a small variety of pesticides in Tuvalu used by farmers in their own agricultural plots. The Agriculture Department provides a supportive advisory service to any farmer in the safe use of pesticides. There is, however, encouragement to use biological controls as an alternative to pesticides to minimise potential chemical hazards and adverse reactions to health and the environment. The Government's policy in general is to restrict the importation and use of potentially dangerous chemicals, primarily to prevent pollution of the fragile environment and the water lenses, particularly in the outer islands.

Tuvalu is relatively free from serious pests and diseases. New fumigation facilities and control measures have been in operation to prevent the accidental import of animals and

plant pests and diseases. Regular checks are also carried out on incoming produce and passenger arrivals as well as on any vessel or aircraft entering Tuvalu.

6.8 Conclusion and Recommendations

The lack of data pertaining to agriculture has been cited in the Tuvalu National Development Plan IV: 1988–1991 as a major constraint which has limited the Agriculture Department's capacity to plan development. The only information available is the annual livestock census, but the figures are inaccurate and can only be used as a guide. It was also noted that the aspirations and needs of farmers had seldom been taken into account in planning for agriculture and there was a need to improve the information base to enable the Division to plan more effective programmes and incorporate its views (Government of Tuvalu 1991: 101). The variety of agricultural activities that affect natural resources also dictates that environmental factors should be taken into consideration, to prevent overexploitation and ensure that one resource is not developed at the expense of another.

The various pieces of legislation dealing with agricultural activities are considered generally satisfactory but they need to be reviewed to include provisions relating to the protection of the environment, where appropriate. Soil conservation measures and research to improve the agricultural information base, taking into account the needs and aspirations of farmers, would be valuable when it comes to minimising the adverse impact of agricultural activities on the land and devising agricultural strategies.

7 Marine Zone

7.1 Extent of Jurisdiction

The *Marine Zones (Declaration) Ordinance 1983* demarcates various marine areas, and by doing so seeks to determine the precise limits of Tuvalu's jurisdiction under international law. The *territorial sea* extends 12 nautical miles out to sea from the "base-line" (s. 7). This is the low-water line of the coast or of fringing reefs, where these exist (s. 2(1)). *Internal waters* are on the landward side of the lines from which the territorial sea is measured (s. 5). This includes lagoons. There is also provision for *archipelagic waters* to be declared (s. 6). The main aim of this would be to define groups of islands as archipelagos, equivalent to a single land mass, and thereby to redefine the points from which the territorial sea is measured in order to extend its coverage, along with the area of the *exclusive economic zone* (EEZ). The EEZ normally extends beyond the territorial sea to a point 200 nautical miles out to sea, measured from the same base-line from which the territorial sea is measured. Compromise arrangements exist where this would extend to less than 200 nautical miles from another country's coast and as a result impinge on that country's EEZ (s. 8). The *contiguous zone* extends 24 nautical miles from the same base-line from which the territorial sea is measured (s. 9).

Tuvalu has the same jurisdiction over its internal waters, archipelagic waters and the territorial sea as it has over the land mass (s. 10(1)), although it must allow passage to ships and aircraft (s. 11).

Under the *Foreshore and Land Reclamation Ordinance* the general position is that the State, not private individuals, owns the foreshore and seabed, but this is subject to public rights of navigation, fishing and passing over the foreshore, as well as any private rights which may exist (s. 3).

Tuvalu's rights over the EEZ are more limited, but in the broad areas of resource exploitation and environmental protection, they are extremely wide. It has exclusive rights to explore, exploit, conserve and manage all the natural resources of the waters, the seabed and the sub-soil (s. 10(2)). This includes, for example, fish and minerals. It is on these provisions that Tuvalu bases its regulation of foreign fishing vessels.

The *Marine Zones (Declaration) Ordinance* contains broad powers to make regulations in relation to activities in the EEZ, covering (s. 12):

- scientific research;
- exploration and exploitation for economic purposes, including the production of energy from waters, currents and winds;
- the construction and use of structures, such as artificial islands and oil rigs; and
- measures for the protection and preservation of the marine environment.

The regulations must comply with the rules of international law. In the case of exploitation of fisheries, for example, this probably includes an obligation to manage the resource and to give other countries access to any surplus fish stocks, above the sustainable level but

beyond those which Tuvalu itself can harvest. This is the position under the *Convention on the Law of the Sea*. Tuvalu is a signatory to this Convention but had not ratified it at the time of this Review.

7.2 Extraction and Reclamation

Under section 3 of the Foreshore and Land Reclamation Ordinance, a licence is required from the Island Council for the removal of sand, gravel, reef mud, coral and any similar substances from the foreshore. The consultants were told, however, that landowners on land bordering the foreshore claim the right to authorise the removal of material, that Outer Island Councils do not enforce these provisions and that the Funafuti Town Council has adopted a lower profile in this area. This conflicts with other information suggesting that the Funafuti Town Council was now adopting a more restrictive policy in relation to the removal of coral for aggregate and that this was the reason for the hotel development proceeding more slowly than expected.

The foreshore only includes the area affected by tidal movement (s. 2) and does not cover seabed which is permanently covered by water. Control over the latter area, however, can be asserted by the State as a result of its ownership rights under the Foreshore and Land Reclamation Ordinance, subject to any private rights which may exist.

The permission of the harbour master must be obtained before material is taken from within the limits of the harbour (Harbours Ordinance s. 27).

The Foreshore and Land Reclamation Ordinance also deals with "reclamation" of land on the foreshore and the seabed. It does not deal with situations where landowners propose to fill the foreshore bordering on their land, although it does not acknowledge that they have any right to do this (s. 11). Because the State owns the foreshore, the answer to this question will depend upon whether they can claim a "private right" which prevails over the State's rights (s. 3(1)).

Reclamation is broadly defined to include the construction of causeways, bridges, viaducts, piers, docks, quays, wharves, embankments, sea walls, landing-places and other structures (s. 2). Before final authorisation is given by the Minister, there must be an elaborate process of public consultation. The proposal must be advertised, inviting objections and claims for loss of private rights, in two successive issues of a government publication, broadcast on two successive days over the radio and posted at each police station on the island. Within a period of at least six weeks, objectors can respond, giving an estimate of any loss which they allege would be incurred by the loss of any private right (s. 4). An inquiry can be ordered (s. 4(4)). This procedure does not, however, apply to the construction of causeways or landing places by or on behalf of the Government or by Councils (s. 5).

Once final authorisation has been given or the causeway or landing place has been constructed, all public and private rights (e.g. access, use and fishing) are extinguished (s. 6). There is specific provision for compensation to be paid to those whose private rights have been extinguished by the construction of a causeway or a landing place by a public body (s. 7(3)). The rights of those who have private rights extinguished by other types of

reclamation are less clear: they are simply allowed to “submit a claim in respect of the extinguishment of such private right” (s. 7(2)), although the implication is that they will indeed be compensated (see s. 8).

Except for causeways and landing places built by Councils, the reclaimed land vests in the State (s. 9), subject to any agreement made for sale or lease (s. 10).

We understand that, in practice, opportunities for land reclamation along the foreshore are very limited because of the short island shelf. There is, however, a major project to reclaim land in the large borrow pit adjacent to the airport to serve as a replacement recreation area once the runway has been sealed. The proposal is to use almata sand from the lagoon. This part of the project is currently subject to environmental impact assessment, but the actual reclamation operation is not to be assessed. We do not know whether this project has been subjected to the public notice provisions of the Foreshore and Land Reclamation Ordinance, but it seems unlikely that the area would fall within the definition of “foreshore”.

The major issue along the coast is the prevention of erosion of the existing land area and there have been a number of projects designed to prevent this, including the use of gabion baskets and concrete blocks. At present, the South Pacific Applied Geoscience Commission (SOPAC) is conducting a beach profiling exercise.

Under the Harbours Ordinance, *any encroachment* on the waters of the harbour requires the Minister’s permission (s. 50). The relationship between this provision and section 28 is not clear. Under section 28, the Minister can license development on the tidal lands and waters of a harbour for a period of up to 21 years, *but only for limited purposes*. These purposes include ship building and repair, boat-sheds, wharves and “any other purpose relating to the convenience of shipping or of the public”. Licences are revocable at the will of the Minister, and compensation is only payable where the licence was for the purpose of constructing a dock or a slip (s. 28).

7.3 Conclusion and Recommendations

The land reclamation provisions of the Foreshore and Land Reclamation Ordinance allow for public input into the decision-making process; this is a model which could be followed in other areas of environmental law. Consideration should be given as to whether there should be similar controls over reclamation of borrow pits by dumping garbage. This is especially important in the case of borrow pits which are affected by tidal movement, because toxic pollutants will leach into the sea. There should be provision for environmental impact assessment of such activities.

As far as taking material from the foreshore is concerned, the main issue here is whether the legislation is being properly enforced, and particularly whether councils are in a position to resist the claims of landowners with land bordering on the foreshore. The requirement to obtain a licence from the council under section 3(2) of the Foreshore and Land Reclamation Ordinance purports to override any private claims. Given the severe problems of coastal erosion faced by Tuvalu, there is a strong argument for these decisions being made by the Government and not Councils. They should be subject to adequate environmental impact assessment.

8 Fisheries

8.1 Introduction

The Tuvalu Medium-Term Economic Framework Programme: 1992–1994 (Medium-Term Programme) points to the crucial importance of Tuvalu's fisheries to economic development, in light of the limited area available for agriculture and the poverty of other known natural resources (Government of Tuvalu 1994: 89). They are also the major source of animal protein in the subsistence diet. The UNCED Report argues that "small-scale fisheries are an increasingly important source of cash income and have important nutritional and social roles to play in sustainable development" (p. 29). It points out that the reef and lagoon resources of most inhabited islands are heavily exploited (p. 30). A major priority of past governments has been to upgrade subsistence fisheries to the artisanal level to satisfy local demand (Government of Tuvalu 1991: 110). The Medium-Term Programme argues that absence of adequate regulation is a constraint on the development of a viable commercial fishing industry by preventing the establishment of a stable market and a dedicated professional occupational fishing group (p. 91). There are, therefore, powerful economic as well as environmental arguments for effective regulation in this area.

The *Fisheries Ordinance 1978* (Cap. 45, as amended by 1/1978, 4/1987, 5/1990 and 7/1991) emphasises the Minister's role in *developing* the fisheries of Tuvalu by taking appropriate measures to "promote the development of fishing and fisheries...to ensure that the fisheries resources...are exploited to the full for the benefit of Tuvalu" (s. 3(1)). This language suggests development at all costs and omits any reference to *conservation* of the resource. It does not reflect the internationally accepted objective of "sustainable development".

There are, however, specific references to the President's power, with the advice of Cabinet, to make regulations relating to the "conservation and protection of all species of fish" by, for example (s. 22):

- establishing closed seasons;
- limiting the size and quantity of fish caught;
- designating prohibited fishing areas; and
- prohibiting fishing practices and equipment likely to damage the fish stock.

"Fish" and "fishing" are defined broadly to include the attracting, pursuing and taking of any aquatic animal, such as turtles and their eggs, sea urchins and beche-de-mer, as well as shell fish, crustaceans and sponges (s. 2).

Under the Fisheries (Trochus) Regulations 1990, fishing for trochus is prohibited "within the area of Tuvalu", which includes the territorial sea, but not the EEZ (*Interpretation and General Provisions Act 1988* (s. 10(1) and *Constitution of Tuvalu Ordinance 1986* (s. 2)). The primary aim here is to protect species of trochus introduced on the outer reefs in 1988–1989 by air drops for eventual harvest (Government of Tuvalu 1991: 120). There is evidence of pressure on giant clams from subsistence fishing, but there are no regulations protecting them, even though, as with trochus, introduced species have been seeded for

commercial harvesting. There are no provisions regulating the taking of turtles or coconut crabs. The lack of protection given to turtles while they are at sea and the limited protection given to their eggs under the *Wildlife Conservation Ordinance 1975* are dealt with below in chapter 12. The exploitation of coconut crabs is also of concern (Government of Tuvalu 1991: 247).

The legislation applies within Tuvalu's "fishery limits". These have been proclaimed to extend 200 nautical miles from the low water mark of the coast or reef fringing the coast, with their inner limits being the end of the territorial sea (i.e. the whole of the Exclusive Economic Zone).

8.2 Local Fishing

All "local fishing vessels" being used commercially must be licensed (s. 4(4)). Those who operate a vessel or allow it to be operated without a licence or do not obey the conditions attached to their licence commit a criminal offence for which they can be fined up to \$200 and imprisoned for up to six months (s. 4(4)). Licences are usually issued by fisheries licensing officers (ss. 4(1), 3(2)). They cannot last for more than one year unless the Minister's approval is obtained (s. 4(3)), thus enabling licence conditions to be regularly adjusted to take into account any overfishing of the resource.

In practice these provisions do not affect most local vessels. This is because the definition of "local fishing vessel" does not include native boats and those less than seven metres long, even if they have an engine and are being used for commercial fishing (s. 2). Artisanal fishermen use fourteen foot outboard trolling skiffs, mainly targeting tuna offshore (Government of Tuvalu 1994: 90). The provisions would, however, cover the pole-and-line vessel, *Te Tautai*, although this is currently deployed elsewhere (Government of Tuvalu 1994: 90).

The legislation offers no special protection to owners of customary fishing grounds against commercial fishing operations.

Traditional subsistence fishing practices are diverse. According to the UNCED Report, the main ones consist of:

reef gleaning at low tide in the intertidal zone; poling and trolling for small surf and schooling tunas using pearl-shell lures; the use of gill nets and encircling nets for catching mullet, milkfish, etc.; handlining for reef and lagoon fish (rarely at depths greater than 50 m); underwater spearfishing; and scoopnetting for flyingfish at night by the light of storm lanterns (p. 30).

The Fisheries Ordinance completely outlaws certain methods of fishing for both commercial and artisanal fishermen. This includes not only use of explosives but any "noxious substance" which makes fish easier to catch. Those who are found in possession of fish caught in this way, in circumstances where they ought to have realised this, are also guilty of criminal offences (s. 14). Driftnet fishing is prohibited within the fishery limits, with penalties of up to \$100,000 and 2 years' imprisonment. The penalties are even higher for

Tuvalu citizens who engage in driftnet fishing anywhere in the area covered by the *Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific* (s. 14A).

There are provisions regulating local fishing practices in a number of local bye-laws. These may have direct conservation significance, such as by limiting the catch, although the primary objective may be to protect those who are still using traditional practices from commercial operations and an increasing resort to new technologies, such as outboard motors.

Some of these include:

- prohibition of certain fishing practices:
 - spears and nets with a mesh size of 1.5 inches or less (Nui Island Council (Control of Fishing) Bye-Laws 1985)
 - using a mechanically powered boat on Nui and Niutao (Nui Island Council (Control of Fishing) Bye-Laws 1985; Tuvalu National Development Plan IV: 1988–1991 (p. 110), although these restrictions are no longer in force on Nui at least; (Nui Island Council (Control of Fishing) (Amendment) Bye-Law 1990);
- prohibition of fishing practices in certain areas:
 - using a spear in waters enclosed by the reef (proposed Niutao Island Council (Control of Fishing) Bye-Law 1987)
 - trolling for fish using weighted lines for sea-bottom fishing in the territorial waters adjacent to the Island (proposed Niutao Island Council (Control of Fishing) Bye-Law 1987)
 - fishing for kaumu using a spear or net in specified parts of the lagoon (Nukulaelae Council (Control of Faapuku and Kaumu) Bye-Laws 1984);
- prohibition of fishing practices in certain areas at certain times in relation to certain types of fish:
 - fishing for faapuku between June and August using a spear or net in various areas, particularly parts of the lagoon (Nukulaelae Council (Control of Faapuku and Kaumu) Bye-Laws 1984).

8.3 Foreign Fishing Vessels

Foreign fishing vessels normally need a permit even to enter Tuvalu's fishery limits, and they always need a permit before they can fish there. They must comply with any conditions attached to the permit (s. 5). Fishing without a permit attracts a fine of \$100,000, while breach of condition only attracts a fine of \$25,000 (s. 5(7),(8)). Under the Fisheries (Foreign Fishing Vessel) Regulations 1982, vessels with permits must inform the Fisheries Officer 24 hours before they enter the fisheries limits and 24 hours before they leave, providing specified information. A log book of the vessel's fishing activities must be kept and sent to the Fisheries Officer within 45 days of the completion of the voyage. The total catch on board, broken down according to species, must be reported on entry and

departure and every seven days that the vessel is in the fishery limits. FADs (floating objects placed for the purpose of aggregating fish) must not be used without permission and their location must be reported. Anything likely to cause harm to any fish or marine mammal or to pollute the waters must not be put into the sea unless authorised by the permit. Fisheries officers can board vessels as observers and they have broad powers of inspection.

Authorised officers (including the police and members of the defence force) have very wide powers of search, seizure and arrest (ss. 8, 9). This includes the power to seize foreign fishing vessels fishing in contravention of the licensing provisions (s. 9(1)(b)(ii)). On conviction of certain offences, the vessel is forfeit (s. 15). (Note that s. 9(1)(b)(ii) and s. 15 need to be amended to make it clear that the offence referred to includes the offence under s. 5(8) of fishing in breach of licence conditions, because the operation of (s. 5(1)) is excluded from operation in relation to agreement and treaty ships fishing under (s. 5A: s. 5A(10)). Licences can also be cancelled or suspended by the Fisheries Officer for breach of condition (s. 7(1)). There is a right of appeal to the Minister from such a decision as well as from a decision to refuse to grant a licence in the first place (s. 7(2)).

The Minister has broad powers to enter into agreements relating to fisheries with governments and government and international agencies (s. 20). The Minister can issue an order to the effect that fishing licences issued under agreements and treaties should be treated as foreign fishing permits (s. 5A(1)). The order may provide that these licences can be issued by authorities outside of Tuvalu and that in certain circumstances they are to be treated as suspended or forfeited, that licences can be transferable and that they can specify the method of fishing permitted (s. 5A(3)). Provision may be made for observers on the foreign fishing vessels (s. 5A(8)).

The Tuvalu National Development Plan IV: 1988–1991 reports that at that time, Tuvalu had agreements with four foreign nations. In addition to the Multilateral Fisheries Treaty with the United States in relation to purse seine fishing, discussed below, there were unilateral agreements with the Republic of Korea, the People's Republic of China and Japan (longline fishing). In the case of the last three, fees were negotiated annually with national tuna fishing industry organisations and were based on expected prices and catch rates (Government of Tuvalu 1991: 113). The conditions applying to the 1986–1987 agreement with the Federation of Deep Sea Fisheries Association of the Republic of Korea are set out in Moore 1988 (p. 319). They cover, in more cursory fashion, some of the topics, such as reporting and record-keeping requirements, dealt with by the agreement with the United States, discussed in detail below. Currently a multilateral treaty with Japan is under consideration (Government of Tuvalu 1994: 95).

8.4 Multilateral Fisheries Treaty

The *Treaty on Fisheries between the Governments of Certain Pacific Island States and the Government of the United States of America* was signed at Port Moresby on 2 April 1987. It acknowledges that Tuvalu has sovereign rights for the purposes of exploring for and exploiting, conserving and managing the fisheries resources of its EEZ. Article 2, however, emphasises the developmental focus of the relationship by providing that the United States will co-operate with the Pacific Island States through the provision of technical and

economic support to assist them to achieve the objective of maximising the benefits from the development of their fisheries resources. In addition to payments based on the number of vessels licensed to fish, there is provision for the rendering of technical assistance to the value of \$US 250,000 (Annex 2, Schedule 2).

Parties to the Treaty, including Tuvalu, have agreed to license US fishing vessels to fish for tuna, other than southern bluefin tuna (Annex 1, cl. 5), in certain parts of the sea under their jurisdiction. So far as Tuvalu is concerned, this excludes the "closed areas" of its territorial sea and waters within 2 nautical miles of certain named banks, but otherwise covers the whole of its EEZ (Article 1 and Annex 1, Schedule 2). There is no maximum catch limit.

Licences can be refused for a number of reasons (Annex 2). These include a prior serious violation of the Treaty or previous multiple violations which constitute a serious disregard of the Treaty, as well as certain situations where the vessel does not have good standing on the Regional Register of Foreign Fishing Vessels, maintained by the Forum Fisheries Agency, because there is evidence giving reasonable cause to believe that the operator has committed a serious fisheries offence and has not been brought to trial.

The terms under which licensed vessels are permitted to fish are set out in Annex 1. Only purse seine fishing is allowed. Advance notice of an intention to enter Tuvalu's waters must be given and information relating to the position of the vessel and the catch must be supplied at regular intervals while it is there. Observers, with full powers of inspection, must be allowed on board. The activities of traditional and locally based fishermen and fishing vessels must not be disrupted or in any way adversely affected.

There are special enforcement provisions in the Treaty. The maximum penalties are higher than those available under the fisheries legislation (\$US 250,000: s. 6). In addition, although the Pacific Island States themselves can take enforcement action (Article 5), the United States Government has assumed primary responsibility for enforcing the provisions of the Treaty and fishing licences issued under it, including investigating offences. In particular, it has agreed to take the necessary steps to ensure that its nationals and fishing vessels comply with these provisions and to facilitate claims made by Tuvalu (Article 4).

The Fisheries (Foreign Fishing Vessel) Regulations 1982, discussed above, apply to US vessels holding regional fishing licences. The *Foreign Fishing Vessels Licensing (U.S. Treaty) Order 1987* provides that the Director of the South Pacific Forum Fisheries Agency can issue a regional fishing licence which is to be treated as a foreign fishing permit in relation to the Tuvalu fishery limits under the *Fisheries Ordinance 1978*, with the exception of certain closed areas. The licence must be issued subject to conditions spelt out in Annex 1 to the Treaty.

8.5 Fish Processing

Fish processing establishments require a licence and once again appropriate conditions can be attached (s. 6). These could include conditions designed to regulate pollution. The National Fishing Corporation of Tuvalu has a fish storage and processing centre on Funafuti and the Government is committed to begin exporting smoked and dried, as well as

fresh, fish to Fiji by the first half of 1992 (Government of Tuvalu 1994: 94). There is to be a pilot project involving the processing and export of shark fins to Hong Kong (p. 95). Because of the difficulties in operating a collection service for fresh or frozen fish from the outer islands, emphasis is to be placed on the production of quality dried fish. Pilot projects funded by the Australian International Development Assistance Bureau to produce dried fish and savoury tuna are to be carried out on Nukufetau and Nanumea (p. 97).

8.6 Conclusion and Recommendations

At a purely formal level, Tuvalu's fisheries legislation contains the necessary structural elements for the effective management of both inshore, reef and pelagic fisheries. The main issues are those of implementation and enforcement. As far as policing the EEZ is concerned, Tuvalu's Medium-Term Programme points out that the country lacks both financial and technical resources to acquire and operate patrol vessels. It therefore proposes to rely increasingly on regional initiatives undertaken by the Forum Fisheries Agency as well as developing liaison with neighbouring countries (including exchange of intelligence and possible "hot pursuit" arrangements), civil aircraft, merchant ships and the Australian and New Zealand airforces (pp. 95-96). (See, for example, the bilateral *Treaty between Tonga and Tuvalu on Co-operation in Fisheries Surveillance and Law Enforcement 1993*.) Another option not discussed is the approach taken in the Multilateral Fisheries Treaty with the US of placing greater responsibility for enforcement upon the State where the ship is registered (flag state responsibility).

In many ways the regulation of subsistence and artisanal fisheries presents even greater difficulties. In the EEZ the issue is currently viewed as one of ensuring that foreign fishing vessels pay for the right to fish. In the inshore areas on the other hand, there is already evidence of non-sustainable fishing in relation to some species and the question is whether the State should intervene now on the basis of the precautionary principle. There is clearly a power to make regulations designed to conserve fish and crustacean stocks, either under the Fisheries Ordinance or local bye-laws. These could impose size restrictions, household quotas or closed seasons, depending on what existing scientific research results suggest would be most helpful. The problems of enforcing such regulations should not be underestimated, however, if they conflict with customary practices.

We understand that research on traditional conservation strategies is proposed. It is desperately needed. The nurturing of such practices, the use of regulations which build on them and the cooption of traditional enforcement machinery is likely to prove the most effective method of influencing behaviour, given the enforcement difficulties in this area. The first step is to identify those practices which are sensitive to conservation of fish stocks (or can be made sensitive with some adjustment) and those which actually have a detrimental impact. Falling into the first of these categories are such practices as secrecy about fishing grounds, taboos or bans on species of fish, restrictions on the consumption of certain species (e.g. only by chiefs or priests) and clan tenure or limited access to reef and lagoon areas. There is an argument that if formal regulation is employed, it should take the form of local bye-laws made with community participation rather than regulations imposed from outside under the Fisheries Ordinance. Communities will then feel a greater sense of ownership of the rules.

9 Mining and Minerals

9.1 Introduction

Tuvalu is a Signatory to the *United Nations Convention on the Law of the Sea* (but had not ratified it at the date of this Review). It is a Party to the SPREP Convention, thereby considerably extending its ocean resource jurisdiction. Such an extension could secure valuable marine and mineral resources for the nation and alleviate some of the concerns expressed about its dependence on foreign aid.

Part XI of the *Convention on the Law of the Sea* deals with the area and subsoil beneath the surface waters which have potential resources for attracting the interests of industrialised nations:

The potential reserves of manganese nodules have been widely debated over the past 10 years, though cobalt crusts and hydrothermal vents may also eventually prove to be commercially viable. Although the mining of these minerals is not expected to take place – at least in the Area – in the near future, Pacific island nations have reasons to maintain a keen interest in this field. (Unpublished paper, author unknown, Fisheries Department, Tuvalu).

Tuvalu is not currently involved in any mineral mining operation, but there is mining of sand and gravel from the foreshore and in the past from borrow pits, particularly on Funafuti, which is of concern to the Government and to the communities living around the borrow pits. Sand, coral and gravel mining are carried out to obtain aggregates, particularly for building purposes and for use in strengthening roadways and the airfield. There is one pilot project currently undertaken by the Public Works Department to refill one of the borrow pits using sand from the lagoon side of Funafuti, but it is still too early for any useful in-depth evaluation to be made by Public Works. An environmental impact assessment (EIA) will be carried out on the effects of “borrowing” sand for fill on the fisheries resources and the foreshore at the same time (personal communication by officials of PWD, March 1992).

The legislation covering foreshore mining is found in the *Foreshore and Land Reclamation Ordinance 1969*. Under this Ordinance, a person is prohibited from removing from the foreshore or any part of Tuvalu any sand, gravel, reef mud, coral or other like substance without first having obtained a licence from the Island Council in whose area of authority the foreshore lies (s. 3(2)). A licence under section 2 may be subject to such conditions as the Island Council thinks appropriate (s. 3(3)). Anyone who contravenes subsection 2 or any condition on the licence is liable to a fine of \$250 (s. 3(4)). This Ordinance is discussed in Chapter 7.

In practice, the interviews conducted during the course of this Review reveal that the taking of sand and coral from the foreshore for a range of purposes, particularly for works such as sea walls, graves or buildings, often only requires the consent of the landowner whose land lies adjacent to the foreshore. Although a licence from the Island Council is necessary for the taking of sand and coral from the foreshore, the application and issue of licence varies depending on the project involved. In some cases, it would appear that the provisions of the Foreshore and Land Reclamation Ordinance are not enforced.

Under the *Harbours Ordinance 1957*, the removal of any stone, shingle or earth or other material from within the limits of any harbour is prohibited without the written authority of the harbour master (s. 27). The limits of a harbour are defined by notice issued by the Minister responsible (s. 4).

As the taking of sand and coral from the foreshore without proper controls could result in serious environmental degradation, the Island Councils are authorised to impose conditions when issuing licences. Information was difficult to obtain as to whether environmental requirements, such as environmental impact assessments, which could mitigate damage, are routinely included. As a number of sand extraction sites remain in the hands of landowners, Island Councils may be faced with adopting new methods and procedures involving more active environmental enforcement.

9.2 Mining for Minerals

Drilling, excavation and any surface or subsurface techniques used for the mining of minerals could have severe environmental consequences. *The Mineral Development Licensing Ordinance 1978* makes provision to regulate such activities.

Under this Ordinance, no one in Tuvalu can prospect or mine for any minerals except by licence (s. 3(1)). The Ordinance does not prevent a Tuvaluan from taking minerals from any land to the extent that custom permits, but any taking is subject to conditions and restrictions as may be prescribed (s. 3(2)(a)). The Ordinance does not apply to searching for and taking minerals for use within Tuvalu as materials for building, road making or for other construction (s. 3(2)(b)).

Under the Ordinance, mineral means:

any substance, whether in solid, liquid or gaseous form, occurring naturally in or on the earth, or in or under the seabed formed by or subject to a geological process, but does not include water (s. 2).

9.3 Reconnaissance Licence

Under the Ordinance, the Minister responsible may, at his discretion, grant a reconnaissance licence to any person over any area in Tuvalu (s. 10(1)) but a reconnaissance licence cannot be granted in respect of any area over which a prospecting or a mining licence has been granted (s. 10(2)). A reconnaissance licence is granted for a period not exceeding two years and subject to such conditions as the Minister may in his discretion determine (s. 10(3)). The Minister may extend the reconnaissance licence for a further period of one year (s. 10(4)). The Ordinance is basically designed to promote the economic exploitation of minerals and thus does not stipulate the kind of conditions to be imposed. The Minister has the ultimate discretion under the Ordinance to impose conditions and it is likely, given the current prominence of environmental issues, that environmental conditions would be imposed as part of the licence.

The holder of the reconnaissance licence must submit reports to the Minister at half-yearly intervals setting forth the holder's evaluation of the mineral prospects together with

technical information such as geological, geochemical and geophysical maps, profiles, diagrams and charts, as well as test analyses (s. 12(1)). The Minister's permission is also required for the removal of any mineral from the reconnaissance area and the Minister may impose conditions on any removal (s. 12(2)). The holder of a reconnaissance licence may exercise his right to erect camp and put up temporary buildings for machinery in the area. If the licence covers areas of water, authorisation may be given for the licensee to place vessels or crafts and erect installations in the water, but these are also subject to limitations imposed when a licence is issued (s. 13).

9.4 Prospecting Licence

A prospecting licence may be granted by the Minister at his discretion provided the Minister is satisfied that the applicant has adequate financial resources and is technically competent and experienced to carry out an effective prospecting operation; the proposed prospecting operation is adequate, and the applicant is able and willing to comply with any term or condition imposed by a prospecting licence (s. 15(1)). The Minister has the power to investigate, negotiate and consult with those considered necessary before deciding to grant a prospecting licence (s. 15(2)). A prospecting licence is subject to terms and conditions that the Minister may determine (s. 16). There is opportunity for environmental conditions and EIA requirements to be imposed under sections 15 and 16.

A prospecting licence is valid for a period of three years in the first instance and renewal can be granted for a further two periods of two years (s. 19(1),(2)). Licence renewal is subject to satisfactory compliance with terms and conditions. There are a number of responsibilities imposed on the holder of a prospecting licence which are of environmental importance such as the requirement to "backfill, plug or otherwise make safe any borehole or excavation made during the course of prospecting operations" (s. 23(3)). The holder is also required to remove at the end of 60 days of the expiry of the prospecting licence any camp, temporary buildings or machinery erected, and to repair to the satisfaction of the Minister any damage done to the surface of the ground as a result of the removal (s. 23(1)(f)).

The holder of a prospecting licence is required to keep full and accurate records and forward these to the Minister every three months to show boreholes drilled, strata penetrated, minerals discovered, the results of any seismic survey, geochemical or geophysical analysis, the geological interpretation of the records, other work done in connection with the prospecting licence and any other matter prescribed by the Minister, which could include an environmental impact statement. Anyone who gives misleading information or falsifies records is guilty of an offence (s. 23(3)).

The holder of a prospecting licence needs the written permission of the Minister to remove the mineral from the prospecting area for analysis and the Minister may impose conditions considered necessary (s. 26).

9.5 Mining Licence

Where minerals have been discovered in commercial quantities by the holder of a prospecting licence, an application may be made to the Minister for the grant of a mining

licence (s. 27). The application for a mining licence must include, among other details, information of environmental significance such as the proposed programme of mining operation and a detailed programme for the prevention and treatment of pollution, the proposed safeguards to protect fishing and navigation, the proposed plans for the progressive reclamation and rehabilitation of lands disturbed by mining, and proposals to minimise the effects of such mining on water and the adjoining land (s. 27(j)(v)).

The Ordinance requires a number of factors to be considered before a mining licence will be issued by the Minister, such as the financial resources, technical competence and experience of the applicant to carry out an effective mining operation (s. 28(d)). In addition, the applicant's ability and willingness to comply with any term or condition imposed in a mining licence (s. 28(e)) will be an important consideration. The issue of a mining licence will be subject to terms and conditions determined by the Minister, including in particular the processing, disposal and sale of the minerals (s. 29).

At present, environmental factors are not specifically included as part of the considerations for the issue of a mining licence. It is important that such matters be specifically spelt out in the legislation and that the requirement of an EIA be specifically included as part of the process leading up to the decision on whether to issue a mining licence. All mining operations will cause environmental impacts, and thus EIA should be made an integral part of sound management planning.

Under section 34 of the Ordinance, the disposal of any stack or dumping of any material and mining waste needs the approval of the Minister (s. 34(d)). If the Minister considers that the licensee is using wasteful mining or treatment practices, he may notify the licensee to show cause within a specified time why he should not cease to use such practices (s. 36(1)). Failure by the licensee to show cause gives the Minister the power to order such practices to cease within a specified time (s. 36(2)), or order the cancellation of the mining licence altogether (s. 36(3)).

The export of radioactive material is prohibited except in accordance with the terms and conditions of a permit granted by the Minister (s. 39(1)).

9.6 Mineral Rights and Surface Rights

Notwithstanding any provision in the Ordinance or any agreement made by the license, the written consent of the Minister is required for the exercise of any mineral right upon:

- land used as a place of burial; and
- any land (not Crown land) set aside or used for the purposes of Government (s. 2(1)(a)(b)).

Where the holder of a mineral right exercises his rights and makes a find of historical or archaeological significance or discovers any wreck, it is mandatory that the Minister be promptly informed. The Minister may give directions for the preservation or disposal of such find or wreck as considered appropriate (s. 42(2)).

Under section 44 of the Ordinance, the holder of a mineral right must, on demand by the owner or lawful occupier of any land, pay fair and reasonable compensation for any damage done to the surface of the land by mining operations and must, on demand, pay compensation for damage to any crops, trees, building or works effected during the course of such operations, provided that:

- (i) any payment of rent will be deemed to be adequate compensation for deprivation of the use of land to which the rent relates;
- (ii) in assessing compensation payable, account must be taken of any improvement made by the holder of the mineral right which will benefit the owner;
- (iii) the basis on which compensation is payable is on the market value of the land less the damage caused to the land.

If it appears to the Minister that the holder of the mineral right over any territorial sea, lagoon or inland waters or any part of the foreshore, has interfered and caused substantial damage to fishing, the gathering of crustaceans, shells or plants or to any other activity customarily carried out in such areas, the Minister may order the holder of the mineral right to pay compensation as the Minister considers fair and reasonable to those who have been adversely affected by such interference or damage (s. 45).

9.7 Compulsory Acquisition of Land

Where the Minister considers that land is required to secure the development or utilisation of the mineral resources of Tuvalu, he may compulsorily acquire that land (s. 47(1)). Acquisition of land shall be deemed to be for a public purpose in terms of the provisions of the Crown Acquisition of Lands Ordinance and any acquisition effected will be in accordance with the provisions of that Ordinance (s. 47(2)).

9.8 Suspension or Cancellation of a Mineral Right

The Minister can suspend or cancel a mineral right if the holder contravenes any provision of the Ordinance or the conditions of the right to mine or the provisions of any other written law relating to mines and minerals (s. 56(b)).

9.9 Regulations

Under section 59 of the Ordinance, the Minister has the power to make the following regulations which are of environmental significance:

- prohibiting the defiling or wasting of water, wherever situated and wherever obtained (s. 59(j));
- preventing pollution and protecting the living resources of the sea.

It appears that no regulations have been made.

9.10 Conclusion

One argument advanced is that there are three basic principles that should apply to all mining activities. First, there should be environmental impact assessment before any mining operation is given approval. Secondly, there should be management plans for all discharges of mining wastes from mine sites for the duration of the mining activity, and after it has ceased. Thirdly, all land disturbed by mining operations should be restored to a condition in which it can support the uses made of it prior to mining. The degradation caused by mining activities in the last century is still evident in some countries today. The citizens who live around sites subjected to mining of any kind should not be expected by the industry to bear the environmental problems caused by these operations. The cost of environmental protection needs to be considered as an integral part of the mining operation should there be any future prospects for mining on land in Tuvalu. In marine zones, requirements for environmental impact assessment, waste management, minimisation of disturbances and protection of the area from contamination caused by any mining operation are equally relevant.

9.11 Recommendations

1. Environmental impact assessment should be required as an integral part of the decision-making process relating to applications for licences to search for and extract minerals.
2. Mining regulations should be made.

10 Water Quantity and Quality

10.1 Freshwater Sources

There are two potential sources of potable (drinkable) water: the freshwater lenses under the islands which are directly dependent upon rainwater, and direct entrapment of rainwater by water storages, essentially roof collecting tanks. The latter consist of private water tanks, to which 85 per cent of households have access, and public cisterns which collect run-off from large public buildings and are controlled by Island Councils. The adequacy of the freshwater lens varies from island to island. On Nanumaga, for example, the lens is negligible in size and water supply is derived entirely from roof catchments. This is also the position on Nukulaelae and largely true of Funafuti, where overcrowding leads to water shortages during rain-free periods. On Nui, on the other hand, the freshwater lens is adequate and is used in combination with storage tanks. Altogether, there are more than 30 public wells in use, but there are no freshwater wells on Funafuti (Government of Tuvalu 1991: 223–226). We were informed that a United Nations report on the amount and quality of groundwater is to be prepared.

In 1986, the Government set a target of providing each household with at least 50 litres of water a day, but no substantial progress was made until 1991, when the New Household Water Storage project, under UNDP assistance, got under way. A major problem has been the failure of communities to provide the free labour component built into the project (Government of Tuvalu 1994: 44). The present Government has committed itself to providing individual household tanks to all families by 1994 (Government of Tuvalu 1994: 71).

10.2 Water Supply

The Tuvalu National Development Plan IV: 1988–1991 comments:

The existing water legislation, introduced in 1978, requires updating as some aspects appear to have little relevance to the present situation in Tuvalu. There are almost no provisions covering ground water, the ownership or control of which is unclear. In addition, more comprehensive building regulations are required as there are no provisions covering water supply and drainage (p. 227).

The legislation referred to is the *Water Supply Ordinance 1967*. The comment is misleading insofar as it suggests that there are “almost no provisions covering ground water” because there are provisions covering the protection of the lens by the declaration of water reserves, discussed below. On the other hand, it is quite true to suggest that the legislation assumes a very different water supply context to the one which presently exists. We understand that there is currently in draft form a new Water Bill, which would replace the Ordinance.

Under the existing Ordinance, the Authority (the Superintendent of Public Works: Legal Notice 49/76) can supply water on application to any premises (ss. 5, 12). In order to be in a position to do this, the Authority is given broad powers to construct and maintain water supply works, such as pipelines and reservoirs, and for these purposes it can enter, take and use any land (s. 3). It can also remove earth, gravel and sand from non-residential land (s.

4). Before exercising any of these powers, it must ordinarily give seven days' notice to landholders whose land is likely to be affected (s. 6). The legislation, therefore, assumes the existence of a centralised supply network which does not exist, except insofar as there are public cisterns. In practice, the current emphasis is on the provision of tanks attached to individual residences. These will apparently be under private control. This raises quite different legal problems.

One of these problems is the issue of water conservation. Under the existing legislation, where there is a water shortage the Authority can ration or discontinue supply, although so far as practicable the domestic supply must be maintained (s. 16). The question which arises is what role law should play where the water supply is largely under private control. To what extent, for example, should there be a legal obligation placed on owners of new buildings to provide adequate water storage facilities? Currently, there are no relevant provisions in the local building bye-laws on Funafuti.

10.3 Freshwater Quality

The Minister can declare any area to be a water reserve in order to ensure adequate and pure water supplies (s. 10(1)). It is an offence to do anything which is likely to pollute a water reserve or, without the Authority's written permission, to erect a structure or dig a pit (s. 10(2)). The Board can order owners and occupiers to remove structures and fill in pits and do the work itself if it is not done within a reasonable time (s. 10(3)). Our understanding is that no water reserves have been declared. It would appear to be only an issue on those islands which make extensive use of groundwater, for example Nui.

The position is that anyone whose land has been used or is in any way adversely affected by the exercise of any of the powers outlined in the previous paragraph is entitled to reasonable compensation, except where any structure or pit is in breach of the Ordinance. If a court concludes that owners have been substantially deprived of the normal use of their land, they can insist on the Minister purchasing it (s. 11). This is a vivid illustration of how out of touch with reality this legislation is, given that landholders in Tuvalu would never want to terminate their relationship with their land in the way envisaged by an outright sale, as distinct from some kind of temporary leasing arrangement. The policy of Tuvaluan governments has been to respect these wishes.

It is an offence punishable with a fine of up to \$100 or three months' imprisonment in default to do or cause or permit anything which may "soil, foul, corrupt or injure" the water supply (s. 9(1)). The Minister is given a very broad power to make regulations to carry out the purposes of the Ordinance (s. 19), and this would include the prevention of pollution of the water lens, for example by controlling the siting of latrines.

The location of wells close to dwellings and especially pit latrines can be a serious problem, as groundwater may become contaminated and flow into the wells (Government of Tuvalu 1994: 70; Government of Tuvalu 1991: 228). The Tuvalu National Development Plan IV: 1988-1991 comments that on Nui "there are potential health problems from well water as there are no controls over the location of wells relative to toilets" (p. 224). At that stage, the Health Division of the Ministry of Social Services (now the Public Health Unit) was in control of the siting of wells (p. 227). The current position is not clear.

We understand that there is a proposal to set up a water quality testing unit. The Public Health Unit, through the sanitation aids on each island, is currently responsible for testing wells, chlorinating where appropriate, but it uses only rough field test kits. Health inspectors pay periodical visits to follow up testing and chlorination programmes.

10.4 Sewerage

None of the islands has a centralised sewerage system. There are septic tanks on Funafuti and Vaitupu, water sealed latrines discharging into soakways, and pit latrines. In 1987, 71 per cent of households had toilet facilities (Government of Tuvalu 1991: 227). The existing sanitation programme under which water sealed latrines are being provided is currently in some funding difficulties (Government of Tuvalu 1994: 45). There is also resistance to their use due to lack of water for flushing and the high cost of toilet paper. The Government intends all households to have adequate facilities, at least pit latrines, by 1994 (Government of Tuvalu 1994: 70-71).

The Tuvalu Medium-Term Economic Framework Programme: 1992-1994 argues that the main responsibility for ensuring that sanitation facilities are provided lies with the Island Councils but acknowledges that the Public Health Unit has some responsibilities under the Public Health Regulations (p. 70). The theory is that the construction of new houses will not be approved unless there is adequate sanitation. Clause 11 of the Public Health Regulations 1926 in fact requires the owner of a house to provide a latrine approved by a sanitary inspector. Latrines must be kept clean. Sanitary inspectors may order unfit latrines to be destroyed and new ones to be provided. The Funafuti Island Council (Building) Bye-Laws 1977 provide that the Council *may* disapprove of a building application on the grounds that it contravenes regulations in force in the area (cl. 5(1)(a)). Clause 18 of these Bye-Laws provides that the occupier of any plot must make adequate provision, to the satisfaction of Council, for the disposal of sewage. Clause 13 allows the Council, under the supervision of the Island Court, to serve a notice on the owner of a building which is "unfit for use or occupation, or is ... in a condition prejudicial to the public health", requiring alterations to be made, and to carry them out itself at the owner's expense if the notice is not obeyed. Currently, there is no provision for inspecting and certifying the adequacy of sanitation in new buildings on completion. The Public Health Unit wants occupation made conditional upon the issue of a completion certificate which would require prior inspection by the Unit to ensure that sanitation is adequate.

The present Government has committed itself to the strict enforcement of these provisions. A building code is to be in force by 1994 (Government of Tuvalu 1994: 71). A proposal to review the Public Health Regulations is currently under consideration.

10.5 Conclusion and Recommendations

There appear to be serious problems with regard to the allocation of responsibility in the area of water supply and sewerage. There are a number of authorities with related functions but no adequate provision for co-ordination and grey areas when it comes to regulatory responsibility. The Tuvalu Medium-Term Economic Framework Programme: 1992-1994 places the responsibility for ensuring that water supply and sanitation facilities are provided firmly on the Island Councils, but acknowledges that they lack resources. Other

departments assist in the provision of wells and pit latrines, but there is a “stark lack of co-ordination” (p. 70). In the future, the Public Health Unit’s role in the area of water supply is to be confined to the protection of the supply from breeding by mosquitoes, but it is to continue to play a role in relation to sanitation alongside the departments responsible for rural development and public works (p. 68).

Questions of water supply and sewerage are interlinked and there is a clear need for one body to have overall responsibility in this area. There is evidence that the Government needs to exercise closer supervision over Councils, as distinct from simply providing advice.

The Tuvalu Medium-Term Economic Framework Programme: 1992–1994 proposes the establishment of a Water Resources Board to advise Island Councils, particularly with regard to technical matters (p. 72). It should also have a co-ordinating role in relation to the provision of both sewerage and water supply. Serious consideration should be given to whether either this body or the Public Health Unit should be assigned some supervisory function over Councils to make sure that they are performing their functions in both of these areas satisfactorily, within the inevitable resource limits.

At present, there is evidence of regulatory failure when it comes to ensuring that adequate sanitation facilities are provided in new buildings. A certificate of adequacy from the Public Health Unit should be required before houses can be occupied.

Beyond this, there is no clear responsibility for the siting of wells in relation to toilet facilities. Once again there appears to be a need, in practice, for the Government to play a supervisory rather than merely advisory role in relation to decisions by Councils, through the Public Health Unit.

These issues should be considered as part of the development of the proposed new Water Act. This legislation should deal with questions of sewerage as well as water supply. Consideration should also be given to whether there is a need to include regulations relating to the conservation of water or whether this would be better dealt with through the educational process.

Although amended on a number of occasions recently, the Public Health Regulations are very much a creature of past expectations and obsessions. They were first made in 1926. Although they contain a number of important aspirations, they are quite unrealistic in their expectations of people in Tuvalu today.

11 Pollution and Waste Management

11.1 Pollution of the Harbour

Under the Harbours Ordinance, the Minister may declare any place to be a harbour (s. 3). Funafuti has been so declared (L.N. 3/66; 6/66). It is an offence to throw anything at all into the harbour or to allow it to fall in, whether from the land or a vessel (s. 44(i)). It is even an offence to let anything fall onto land from where it is likely to fall or be washed into the harbour (s. 44(ii)). Offenders can be fined \$1,000 and imprisoned for twelve months in default, as well as being required to “remove” the object in question or to “make good any damage”. It would be appropriate to have a general clean-up requirement as the concepts of removal and making good may be too restricted in the case of some pollutants. Under clause 9 of the Harbours Regulations, the master or owner of any vessel or shore installation commits an offence if oil is discharged or allowed to escape into a harbour.

It is an offence to permit any privy to discharge into the harbour or to cast or discharge or to suffer to be cast or be discharged any night soil, sewage or other filth into a harbour except at such times and places permitted by the harbour master (s. 48).

Vessels no longer fit for service and timber must not be placed or left in the harbour (s. 44(iii)). The harbour master can order the harbour to be cleared by the master or the owner of any thing sunk or stranded in it, and direct it to be done at their expense if they do not comply (s. 24).

Vessels carrying dangerous or inflammable material require the approval of the harbour master before berthing (s. 22).

Landing places and wharves to which the public has access must be kept clean by owners (Harbours Regulations cl. 6).

11.2 Compensation for Oil Pollution

The *Merchant Shipping (Oil Pollution) (Tuvalu) Order 1975* extends certain provisions of the *Merchant Shipping (Oil Pollution) Act 1971* (UK) to Tuvalu. It gives effect to the *International Convention on Civil Liability for Oil Pollution Damage*, signed in Brussels in 1969, which provides uniform rules and procedures for determining questions of liability and for awarding compensation when damage is caused by pollution resulting from the escape or discharge of oil from commercial (s. 14(1)) bulk oil carriers. The *general* position (ss. 1(1), 3(a), 15(1)) is that where persistent oil is discharged or escapes from such a ship the owner is only liable for:

- any damage caused by contamination in the area of Tuvalu, including the territorial sea (s. 23(2));
- the cost of reasonable measures aimed at preventing or reducing the damage;
- any damage caused by the preventive measures.

There is no liability (s. 2) where the discharge or escape:

- resulted from an act of war, hostilities or an “exceptional, inevitable and irresistible natural phenomenon”;
- was caused by someone, other than the servants or agents of the owner, who intended to do damage;
- was caused by an authority neglecting its responsibility to maintain lights or other navigational aids.

Even where there is liability, the owner can apply to the High Court of Tuvalu to limit it to a specified amount (s. 5) based on the ship’s tonnage but subject to an overall maximum (s. 4). The court must distribute this amount to claimants in proportion to their claims (s. 5(2)) and in doing so must take account of any reasonable measures taken by the ship owner to prevent or reduce damage (s. 5(5)).

Commercial ships carrying a bulk cargo of more than 2,000 tons of persistent oil must not enter or leave a port in Tuvalu or terminal in the territorial sea unless they hold a certificate certifying either that they are owned by a State and that the State will take responsibility for pollution liability (s. 14(2)) or that they are insured against these incidents (s. 10). Legal proceedings can then be brought against the insurer unless the discharge or escape was due to the wilful misconduct of the ship owner (s. 12). But the insurer can also limit its liability (s. 12(3)).

Where liability is excluded or restricted under the provisions discussed above, the *Merchant Shipping Act 1974*, again extended to Tuvalu by the *Merchant Shipping (Oil Pollution) (Tuvalu) Order 1975*, provides that the International Oil Pollution Compensation Fund will usually pick up the bill (s. 4(1)), albeit still subject to an overall maximum (s. 4(10)) and Schedule 1). This fund is made up of contributions from oil importers and others receiving oil (s. 2). Payments will not be made from the fund where pollution damage resulted from an act of war or hostilities or where the ship involved was operated by a State on non-commercial government service (s. 4(7)).

11.3 Marine Pollution Act

The recently enacted *Marine Pollution Act 1991* deals with prevention of marine pollution and the dumping and incineration of wastes at sea, in fulfilment of Tuvalu’s responsibilities under certain international treaties to which it is a party:

- *International Convention for the Prevention of Pollution from Ships 1973 and the 1978 Protocol* (MARPOL);
- *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972* (London Dumping Convention);
- *Convention for the Protection of the Natural Resources and Environment of the South Pacific Region 1986* (SPREP Convention) and Protocols.

The Act does not apply to ships or aircraft operated by another country and used for non-commercial purposes, or to aircraft “used as aircraft of a State other than Tuvalu” (s. 30). The Minister may grant exemptions to particular ships (s. 31).

A distinction is drawn between dumping and discharge/escape. Dumping is the deliberate disposal of waste or other matter, except where this is incidental to the normal operation of ships and aircraft (s. 2(1)). Discharge/escape covers spills, leaks, emissions, pumping, pouring or emptying, but not dumping (s. 2(3)). The penalties for the offences set out below are severe: a fine of up to \$100,000 and any clean-up costs (ss. 9, 19-21).

Discharge/escape is covered by Part II of the Act. An offence is committed (subject to exceptions spelt out in regulations: s. 33) where:

- oil or any other substance which the Minister has specifically declared to be a pollutant (s. 2(2)) is discharged or escapes into Tuvaluan waters from a ship or any other structure, from a place on land or from equipment used to transfer oil or a pollutant from or to any ship (s. 3);
- garbage or sewage is discharged or escapes into Tuvaluan waters from a ship or any other structure, *but not from a place on land* (s. 5);
- certain kinds of oil and other pollutants are discharged or escape from a Tuvaluan ship into waters beyond Tuvalu's EEZ (s. 4);
- garbage or sewage is discharged or escapes from a Tuvaluan ship into waters beyond Tuvalu's EEZ (s. 5).

There are a number of defences:

- that the substance had to be discharged for safety at sea reasons and that this was a reasonable step to take;
- that the substance escaped because of damage to the ship or structure and that there was no negligence on the part of the defendant, provided that as soon as possible all reasonable steps were taken to prevent the escape, or at least to stop or reduce it;
- where the escape or discharge is from a place on land, that it was caused by someone who was there without the occupier's permission and that the occupier had taken all reasonable steps to prevent access;
- where the offence charged is under section 3 (see above) and the defendant is the occupier of the place on land or in charge of transfer equipment, that the discharge or escape was not due to negligence and that immediately afterwards all reasonable steps were taken to stop or reduce it;
- where the offence charged is under section 5 (see above), and involves synthetic fishing nets, that the loss was accidental and that all reasonable precautions had been taken to prevent it.

Regardless of whether or not an offence has been committed, there is a duty to report precise details of any discharge or escape of oil or pollutant, or any significant threat, by the quickest means possible, preferably by radio. This duty only applies to garbage and

sewage if the discharge or escape or significant threat involves a quantity or concentration likely to be detrimental to human health or harmful to marine life (ss. 11, 12). Note that the duty to report specifically applies to discharges and escapes of garbage and sewage from places on land, although there is no reference to the person upon whom the duty is placed in this case (i.e. the occupier of the place). There is also a duty to report stranded and abandoned ships (s. 11(4)).

Regulations can be made requiring Tuvaluan ships, and ships and structures in Tuvaluan waters, to carry specified pollution prevention, mitigation and clean-up equipment (ss. 7, 8). Ships and structures can be required to keep records of operations involving oil and pollutants, and discharges and escapes of oil and pollutants (s. 13). The harbour master is given the power, but not the duty unless directed by the Minister, to provide reception facilities for ships to deposit pollutants, garbage and sewage at a fee (s. 10).

Dumping is covered by Part III of the Act. It is an offence (s. 21), unless there is a permit authorising the activity:

- to take any matter on board any ship or aircraft in Tuvalu or its waters for the purpose of dumping or incineration;
- to dump any matter into Tuvalu waters from any ship, aircraft or structure, but *not from any place on land*;
- to incinerate any matter on any marine incineration facility in Tuvalu waters;
- to dump any ship, aircraft or structure in Tuvalu waters;
- to dump any matter from any Tuvaluan ship into the sea beyond Tuvalu waters;
- to dump any Tuvaluan ship into the sea beyond Tuvalu waters.

It is a defence (s. 24) if the dumping or incineration was a reasonable step to take and was necessary:

- for the purpose of saving or preventing danger to human life; or
- for the purpose of ensuring the safety of a ship, aircraft or structure in the case of dramatic shifts of weather such as cyclones; or
- for the purpose of averting a serious threat to a ship, aircraft or structure;

and, in addition:

- the resulting damage was less than would otherwise have occurred; and
- the dumping or incineration was carried out so as to minimise the likelihood of damage to human or marine life.

Permits, including detailed conditions, for dumping and incinerating matter at sea are issued under section 23. In deciding whether to issue a permit the Minister must take into account criteria spelt out in Schedules 1 (dumping) or 2 (incineration). These include: the characteristics and composition of the matter (including toxicity and persistence); the characteristics of the dumping or incineration site and the method of dumping or incineration; effects on marine life, amenity and other possible uses of the sea (e.g. protection of conservation areas); and the practical availability of alternative land-based methods of treatment or disposal. In reaching a decision, the Minister must consider whether there exists an adequate scientific basis and sufficient knowledge of the composition of the matter for assessing impact on the marine environment and human health.

General permits last for up to a year (s. 23). Regulations can be made requiring a special permit for one-off activities (s. 23) to be obtained for toxic or hazardous matter. They can even prohibit the issue of permits altogether (s. 22). There is an absolute prohibition on the storage of toxic or hazardous matter in Tuvalu waters (s. 20).

Radioactive matter is dealt with separately. It must not be stored in Tuvalu waters (s. 19) or dumped from ships or structures, and it is even an offence to take it on board for dumping (s. 18). Tuvaluan ships must not dump it outside of Tuvaluan waters (s. 18). Dumping permits cannot be issued as section 23(8) specifically states that “no permit shall authorise the dumping of radioactive waste or other radioactive matter”.

Part IV of the Act provides that where there is a serious risk of pollution either from a shipping casualty in or outside Tuvalu waters, or an incident involving a structure, the Minister has the power to take action or issue directions to prevent pollution to Tuvalu waters, the coast or marine life from oil or any pollutant identified by regulations. Action taken could include taking over control or sinking the ship, or destroying its cargo (s. 25). It is an offence to fail to use due diligence to comply with the directions or to obstruct those who are carrying out the Minister’s instructions, except where there is a need to save life at sea (s. 27).

11.4 Dangerous Substances

The provisions of the *Petroleum Ordinance 1968* at present only apply to petroleum, but the Minister may by notice extend them to other inflammable substances (s. 2(3)). Ships carrying cargoes of petroleum must comply with directions issued by the harbour master, customs officer and other relevant officials while in a Tuvalu port (s. 3). Petroleum in any quantities can only be kept in specially provided Government warehouses (s. 6(1)), licensed buildings (s. 6(2)) or on premises from which it is licensed to be sold (s. 5). It must be stored separately and distinctively marked (s. 7). Naked lights, matches and highly inflammable articles must be kept away from these storage facilities (s. 9). Those using petrol driven machines in any building require a licence from the Inspector of Petroleum, and such a licence must not be issued unless there is no “material risk or danger” associated with the use of the machine and the building is situated and constructed as to be consistent with public safety (s. 10). This allows the Inspector of Petroleum to control the siting of facilities and imposes a form of planning control. Conditions can be attached relating to time of use and reduction from risk of explosion and fire (s. 10(3)). There are very wide

powers of enforcement, including seizure of petroleum and containers illegally stored (ss. 11–13). Regulations can be made covering a broad range of matters, including the prevention of the escape or discharge of petroleum from vessels into inland or tidal waters (s. 17). No pollution prevention regulations have so far been made, but the Petroleum (Control of Storage) Regulations (L.N. 23/75) deal with petroleum storage containers.

11.5 Solid Waste Disposal

Normal household waste has traditionally been recycled by feeding to pigs or composting/mulching. The Tuvalu National Development Plan IV: 1988–1991, however, points to the growing problem of waste disposal, especially on Funafuti, created by packaged imports, particularly plastics (p. 227). The Tuvalu Medium-Term Economic Framework Programme: 1992–1994 found evidence of the recycling of containers, for storage and growing plants. On Funafuti, aluminium cans are baled for export. An incinerator has been built for disposal of hospital waste. The Medium-Term Programme nevertheless treats solid waste disposal as a serious problem. It commits the Government to the establishment of clearly defined areas for waste disposal, the first priority being Funafuti, and the elimination of the dumping of environmentally dangerous waste in borrow pits which are currently the subject of reclamation attempts involving the dumping of garbage (pp. 45; 61; 70–72).

Under the Public Health Regulations, all premises and land must be kept clean (cl. 2). Rubbish must be burnt if possible, and if not, put in tins ready for daily collection (cl. 14). Some rubbish is in fact burnt on the beach.

Among the functions which can be assigned to a local council under the Local Government Ordinance are the provision of sanitary services dealing with rubbish and the prohibition of acts detrimental to the sanitary condition of the area (s. 45(1)). The Tuvalu National Development Plan IV: 1988–1991 acknowledged the existence of a joint responsibility between the Government and the Funafuti Council for the collection and disposal of refuse (p. 227). There is some dispute over how regular the collection service on Funafuti is. The Council argues that it provides a daily service but others suggested that it was at most once a week. No dumping area has so far been designated and waste is dumped in borrow pits at the request of landowners with a view to reclaiming the land. There is currently a proposal to require householders to divide garbage at source into dangerous and non-dangerous (recyclable).

It is an offence under the Public Health Regulations to deposit a receptacle in any public place or to allow receptacles to remain upon any premises. The original aim here was to prevent mosquitoes from breeding rather than the prevention of litter *per se*. There would appear to be no provisions other than this regulating litter.

11.6 Conclusion and Recommendations

With the enactment of the *Marine Pollution Act 1991*, Tuvalu now has legislation regulating the dumping or escape of certain pollutants and waste into its marine environment. The main limitation of this legislation is that except for oil pollution, it only covers pollution from *land-based* sources if the Minister specifically defines substances as “pollutants” by

making regulations. The offence under section 5, relating to garbage and sewage, does not cover discharge or escape from places on land. Nor does the Act deal with the storage of radioactive, toxic or hazardous waste on land, as distinct from the sea.

Appropriate policy covering waste minimisation and the disposal of waste from land, and on land, needs to be developed. At a fundamental level, the selection of tipping sites is totally unplanned and unregulated, largely depending on the wishes of individual landowners. In Chapter 7, it was suggested that consideration should be given to regulating the reclamation of borrow pits by the dumping of waste. Adequate environmental assessment should be mandatory prior to sites being nominated.

12 Wildlife Conservation

12.1 Introduction

Tuvalu's national report for UNCED points out that although there are probably no indigenous land mammals in Tuvalu, there are birds, insects and crabs and some of these constitute "resources of considerable importance to sustainable development, both in terms of their cultural utility and their possible commercial importance to the development of national reserves and a limited tourist industry" (Government of Tuvalu 1992: 28). Some species of avifauna are becoming rarer as a result of increasing population density, habitat destruction and human predation (p. 29). There is a conflict arising from the local population's traditional practice of supplementing their limited diets by eating certain species of birds (p. 28), although it is not clear whether this coincides with those species becoming rarer. In addition, the UNCED Report points out that the indigenous vegetation of Tuvalu is among the most degraded in the Pacific (p. 25). Little appears to be known about the terrestrial habitat of these avifauna, and, in light of this, development which interferes with this habitat should proceed cautiously and the likely impacts be carefully assessed. The UNCED Report, for example, points out that groves of *Pisonia* are favoured by sea birds as a rookery and for roosting (p. 10). When it comes to marine life, mangroves contribute to the nutritional requirements of a high proportion of food species, including many commercially important ones (p. 15).

There are two approaches to wildlife conservation. One is to set aside certain special areas, such as national parks and nature reserves, where fauna and their habitat are protected. Usually, this will involve land owned or leased by the Government. Another is to apply controls generally so that they also regulate activities on private land which interfere with fauna or its habitat.

A decision must also be made as to the type(s) of regulation used. Historically there has been a focus on controlling direct human interference with fauna (hunting and killing or removal of eggs and young). Increasingly, however, many countries are beginning to focus on the protection of wildlife habitat, the assumption here being that habitat destruction rather than direct human interference constitutes the major threat to fauna.

The South Pacific Biodiversity Conservation Programme (SPBCP) is working to establish conservation areas in member countries of the South Pacific Regional Environment Programme (SPREP). One of this Programme's key principles is to work with communities and to apply customary environmental controls and protective measures. In Tuvalu, discussions have been held with the Government and local communities to establish conservation areas in a small group of atolls from Fualopa through to Tefala in the Funafuti lagoon.

12.2 Protected Areas

12.2.1 Prohibited Areas

The *Prohibited Areas Ordinance 1957* allows the Minister to declare any island within Tuvalu or the first three geographical miles of its territorial waters to be a prohibited area (ss. 2, 3(1)). The effect of this is that entry is forbidden without the Minister's permission (s. 4). There are, however, fundamental problems with this legislation as a vehicle for setting aside areas for nature conservation purposes. It is not possible to set aside *parts* of islands or the seabed. The long heading to the Act is misleading insofar as it suggests that parts of the territorial waters can be declared prohibited areas. Moreover the effect of a declaration is purely negative. In essence it has the effect of substantially isolating fauna from human contact, but there is no provision for management where this is required. There is not even a power to make regulations.

In practice, no islands have been declared to be prohibited areas.

12.2.2 Closed Districts

The *Closed Districts Ordinance 1936* enables the Minister to declare closed districts and, unlike prohibited areas, these can be declared over parts of islands (ss. 2, 3). We understand that in practice, no closed districts have been declared.

Closed districts are distinguishable from prohibited areas in terms of the range of people allowed entry. Unlike prohibited areas, they remain open to natives of the area and those ordinarily resident there, as well as government officers. Although, therefore, they may serve a beneficial function in protecting wildlife habitat from human population pressures arising from migration, they have nothing to offer in terms of protection from both direct and indirect interference from the existing population or from development pressures which pose threats to habitat.

Those who hold a licence are also allowed to enter (s. 4). Conditions can be attached (s. 5) and licences can be revoked at will (s. 6). It is an offence punishable with a fine of up to \$200 and six months' imprisonment in default to be in a closed district without a licence or to breach the conditions of a licence (ss. 7, 8, 10).

Regulations can be made "generally for the purpose of carrying" the Act into effect, including the conditions under which licences will be granted (s. 11), although the Closed Districts Regulations (L.N. 8/75) are silent on this question. This would not allow regulations to be made restricting those activities of the native population which directly interfere with birds or marine animals or destroy habitat. As a result, there are fundamental restrictions on the extent to which regulations could provide for the management of areas for the purposes of nature conservation.

12.2.3 Wildlife Sanctuaries

There is no legislative provision for national or marine parks. However, section 8 of the Wildlife Conservation Ordinance allows the Minister to declare any area to be a wildlife

sanctuary and to declare any area within a sanctuary to be a closed area, where even entry without a licence is forbidden. We understand that in practice no wildlife sanctuaries have been declared.

There are no provisions dealing with the protection of habitat. The concern is to protect wildlife from direct human interference. Within wildlife sanctuaries the hunting, killing or capturing of *all* birds and other animals without a licence is prohibited. So too is wilful destruction and damage to eggs and nests (s. 8(2)).

Fish are not protected. There appears to be no reason why a wildlife sanctuary should not be declared over an area of the seabed. Ownership of the seabed generally lies with the Crown (Foreshore and Land Reclamation Ordinance s. 3), thus avoiding issues of compensation, except where public or private rights exist. However, the exclusion of fish from the protective provisions of the Wildlife Conservation Ordinance would deprive this of much of its effect. There is no definition of "fish", but under the Fisheries Ordinance, it is defined broadly so as to include all aquatic animals, including sea urchins, turtles and their eggs and beche-de-mer, as well as shellfish, crustaceans and sponges (s. 2). If it was defined by the courts in the same way under the Wildlife Conservation Ordinance, there would be little point in declaring marine wildlife conservation areas, except, perhaps, to protect corals, which are not expressly covered by the definition.

Note that although there are provisions for granting, attaching conditions to, and revoking licences to enter closed areas (s. 8(4)–(7)), there are no equivalent provisions relating to hunting licences. This appears to be an oversight.

12.3 Protected Animals

There are two categories of protected bird and animal *outside of wildlife sanctuaries*. (Once again fish are excluded.) The Minister can declare birds and animals to be either *fully* or *partially* protected. The difference is that those partially protected are only protected against being hunted during the *closed season*, which is specified for different species in the Minister's notice (s. 3(1)(b)) and in the Declaration of Fully and Partially Protected Birds and Other Animals (12 of 1975), (Schedule 2). At present only certain species of birds, not animals, are protected. They are protected throughout Tuvalu, although the legislation allows for narrower areas to be specified, including areas where a particular species is fully protected and areas where it is partially protected ("designated areas": s. 3).

Protection rests on a number of prohibitions:

- against hunting, killing or capturing them (s.5(1),(2));
- against possessing, acquiring, selling or giving any which have been unlawfully killed or captured, or any part or product of them (ss. 5(1),(2); 9(1)) – this would cover both those who give and those who have been given meat, and things made from skins and shells (s. 2(2));
- against searching for, taking or wilfully destroying or damaging their eggs and nests (s. 6(1),(2));
- against possessing, acquiring selling or giving eggs or nests unlawfully taken (s. 6(1),(2); 9(1)).

Note that the first and third of these offences are restricted to the closed season in relation to partially protected birds. There are no provisions concerned with restricting interference with habitat.

Exceptions to these prohibitions can be made through the granting of written licences (ss. 5, 6). Where birds, nests or eggs are taken under the terms of a licence they can be lawfully given and received. The Minister can also issue a general notice allowing a particular species to be hunted and captured, but not killed (s. 5(3)).

Those convicted of an offence are liable to a penalty of up to \$200 and imprisonment of up to six months (s. 10(1)). If anyone found in possession of a prohibited article wishes to argue that they acquired it lawfully (e.g. from someone who had a licence), they must prove that this is the case (s. 9(2)).

Wildlife wardens, including voluntary wardens, can be appointed to enforce the legislation (s. 4). They have broad powers of arrest on reasonable suspicion and search and seizure (s. 11). They have the power to bring prosecutions (s. 13). Our understanding, however, is that no wardens have been appointed. The tensions involved when it comes to questions of law enforcement are evident in the following statement in the Tuvalu National Development Plan IV: 1988–1991 (p. 247):

Birds contribute to the subsistence diet, complementing marine and agricultural produce. As methods of collection have improved, the dangers for their long term survival have increased. In the past, the Government has been reluctant to impose restrictions on these activities. However, if there is clear evidence that these resources are diminishing, appropriate counter measures will need to be introduced.

It is by no means clear that vigorous enforcement is the appropriate response, given the place which the birds occupy in the local population's diet. Alternative methods of providing variation to this, for example poultry, need to be explored. Another approach would be to consider selective culling of birds and taking of eggs after careful study of the impact which this would have. These could be sold and the money generated used for wildlife management purposes.

12.3.1 Turtles

The UNCED Report points out that both the hawksbill and green turtle are present in Tuvalu and that there are turtle nesting areas on some small islets and sandbanks. The green turtle is considered endangered (Government of Tuvalu 1992: 32–33). Apart from the confused legal position, discussed below, there are massive enforcement difficulties, even where protective regulations are in place, because of the fact that turtle meat and eggs are considered delicacies by the indigenous population. Furthermore there are difficulties involved in catching those who breach the regulations, even if there was motivation to do so. The Tuvalu National Development Plan IV: 1988–1991 expresses concern about the exploitation of turtles, but it acknowledges that "there are no enforcement procedures and little capacity to ensure compliance" (p. 247).

The formal legal position with regard to turtles is complicated and there are a number of questions which remain unanswered. It is important to distinguish between:

- turtles taken from land and those taken from the sea; and
- turtles taken from inside and those taken from outside wildlife sanctuaries.

Turtles outside wildlife sanctuaries

Section 7 of the Wildlife Conservation Ordinance prohibits the hunting, capturing and killing of wild turtles without a licence, whether or not they are in a wildlife sanctuary, but only when they are on *land*. Turtles can lawfully be taken from the sea. They are not protected under the Fisheries Ordinance.

Possessing a wild turtle dead or alive which has been unlawfully taken is also prohibited (s. 9(1)). The legal position with regard to possession of turtle meat is not clear (cf. s.2(2)) which specifically includes meat within the definition of “fully or partially protected bird or other animal”. The legal question posed is when does a wild turtle cease to be a turtle and become turtle meat. Possessing, selling, giving and receiving things made from turtle shells is clearly not an offence. No protection is given to turtle eggs. They can quite lawfully be taken, possessed, sold, given and received. Some attention should be given to whether “turtle” should be defined and whether it should be defined broadly to include meat, products and eggs.

Although the possession of wild turtles is an offence (s. 9(1)), there is no specific prohibition on giving, buying or receiving turtles. Many of these activities would be caught by the prohibition on possession, as extended by the concepts of aiding and abetting, counselling and procuring (Penal Code ss. 21, 23) and the offence of conspiracy (Penal Code s. 378). Consideration should be given, however, to whether express offences should be created to make it quite clear that these activities are prohibited.

One way of filling in the gaps relating to the protection of turtles would be to declare turtles *protected animals*, under the provisions discussed above. (In Kiribati, the green turtle is protected in certain areas.) The effect of this would be that turtle nests and eggs would be protected while possession of and trade in their eggs, meat and shells would be prohibited, whether or not it was commercial. This assumes that turtles are defined under the Ordinance as animals rather than fish. (This definitional question should be given attention.) There is no definition of fish or animal in the Wildlife Conservation Ordinance. In the Fisheries Ordinance the definition of “fish” includes turtle, but this is not binding for the purposes of the Wildlife Conservation Ordinance. It could be argued that turtles would normally be regarded as animals in the absence of special definitions such as that found in the Fisheries Ordinance.

Turtles in wildlife sanctuaries

The position of turtles, their eggs and nests in *wildlife sanctuaries* depends on whether turtles are defined as animals or fish. As we have already seen, fish are not protected from human interference in wildlife sanctuaries but animals, their eggs and nests are (s. 8(2)).

Even if searching for, taking or destroying and damaging turtle eggs and nests is prohibited in wildlife sanctuaries under section 8(2), there is no regulation of trade in turtle meat, eggs, skin and shells.

12.4 Customary Law

There are many instances where customary controls operate to conserve natural resources and to protect the environment. We understand, for example, that in some areas there are bans on the killing of female turtles and on shooting birds during the breeding season. On Niutao we are led to understand that the Council President makes an assessment of the number of black noddies by counting them in a particular tree and will not allow hunting to go ahead if numbers fall below a certain level.

There are, however, situations where customary practices which allow people to take and eat birds and marine life may conflict with provisions in legislation designed to protect fauna for nature conservation purposes.

Provisions dealing with the recognition of customary law are to be found in the *Laws of Tuvalu Act 1987*. The general position is that customary law does not have any effect if it is inconsistent with legislation (s. 5(2)). In other words, if legislation makes it a criminal offence to kill protected birds, it is no defence that this is permitted under customary law. There are a number of qualifications elaborated in the Schedule to the Act, which sets out the situations when customary law is to be recognised and how it is to be proved.

Most environmental law uses the criminal law as a vehicle for enforcement and penalty and this will ordinarily prevail over customary law, but clause 3 provides that customary law "may be taken into account" in criminal cases in certain circumstances. In other words it is only a factor to be considered - it is not decisive. The circumstances are:

- (1) ascertaining whether a person has a particular state of mind which must be proved for the offence to have been committed, or is a vital part of a defence;
- (2) deciding whether a person behaved reasonably, where the definition of an offence makes this an issue;
- (3) deciding whether an excuse put forward is reasonable, where reasonable excuse is a defence to the particular offence charged;
- (4) deciding whether to proceed to a conviction where the court has the option of merely finding that the facts have been proved and not registering a conviction;
- (5) determining the penalty; and
- (6) where the court thinks that by not taking the customary law into account injustice will or may be done to a person.

In practice, any of these could be raised as an issue in a prosecution for an environmental criminal offence, depending on the precise definition of the offence. In the offences under the Wildlife Conservation Ordinance, the last three are likely to be the most important. For example, a court could well decide not to register a conviction or to reduce the penalty of someone found committing an offence in relation to turtles or protected birds because this was a customary practice. It might even decide, in accordance with the last of the

exceptions noted above, that it would be unjust to convict at all. One argument might be that the accused did not realise that a particular bird was protected, an excuse that would ordinarily fall into the category of mistake of law rather than fact and not constitute grounds for acquittal under (1) above. An approach which allowed such an argument to be pleaded as an excuse or in mitigation of penalty would be especially attractive in a situation where the Government made a relatively sudden decision to enforce laws such as this, which have not traditionally been enforced at all.

At present, the Wildlife Conservation Ordinance does not contain a defence of reasonable excuse, so that the third exception is not relevant. One approach would be to amend the legislation to provide for such a defence and then to allow customary practices to be taken into account in determining the reasonableness of the excuse.

12.5 Conclusion and Recommendations

Apart from the confused position with regard to turtles, Tuvalu has a range of provisions which, if adequately implemented and enforced, would offer a considerable degree of protection to fauna on land. The highest level applies to protected animals, whether or not they are in wildlife sanctuaries. There is no provision for the protection of fish. Other marine life *could* be declared protected in the sea as well as on the land, provided that it can be defined as an "animal". Attention needs to be given to developing an adequate definition of the wildlife to be covered by the legislation and to ensuring that this is in line with the definitions under the fisheries legislation, considered below. In light of evidence of the scarcity of turtles, consideration should be given as to whether all species should be protected to some degree both on land and in the sea. Given the major law enforcement problems that exist, the main initiatives in this area should be through customary controls, where they exist, and education rather than prosecution.

The list of protected birds was compiled some time ago and it would be appropriate at this stage to review it in light of what is now known about the conservation status of different species. Limited harvesting of particular species may prove to be acceptable and this would take some of the pressure off any law enforcement efforts.

The present legislation offers no protection from interference with wildlife habitat by human development. It merely outlaws direct human interference. This is even the position in wildlife sanctuaries, where there are no restrictions on development. In practice, this may not be an issue at present. An assessment needs to be made of the extent of threats to habitat and whether this requires the enactment of appropriate provisions dealing with the assessment of environmental impact.

The issue of law enforcement needs careful attention. At present, there appears to be no attempt to enforce the provisions of the legislation. There are formidable difficulties facing any such attempt, not least the fundamental clash with traditional dietary habits and the difficulties faced by police who must continue to live in communities and whose lines of communication with the Government are stretched to the limits. Justifications based on nature conservation or the preservation of biological diversity are likely to prove unconvincing to communities with limited diets and few resources. Thought needs to be given to developing alternative strategies to coercion through legislation. It may be possible

to build on to existing customary controls in some cases, perhaps formalising them in some way (e.g. enactment of bye-laws). This would certainly involve some degree of regulated harvesting (e.g. closed seasons and limited catch sizes). But this would first require a major research effort to discover precisely what environmentally sensitive traditional controls exist. Other than this, non-legal initiatives, such as the provision of information and education, may achieve far more success in the long run than the threat of criminal law.

Finally, there is the question of whether it would be appropriate for a wildlife sanctuary system to be developed on Tuvalu. A crucial difference between Tuvalu and some other countries which have an extensive system of reserves is that the Government does not own land on most of the islands and is not politically or economically in a position to purchase land using its compulsory powers. If it is to set aside land, it must lease it at some expense as well as employing people to manage it. In light of this, alternative methods of management which seek the co-operation of the local people while allowing limited development of the land need to be explored.

13 Protection of National Heritage

13.1 Current Legislation

Legal provisions for the protection of national heritage are found scattered in a number of pieces of legislation and bye-laws.

Under the *Mineral Development Licensing Ordinance 1978*, if the holder of a mineral right makes any find of historical or archaeological significance or discovers any wreck, the Minister responsible for mineral resources must be promptly informed. The Minister may give appropriate directions for the preservation or disposition of such find or wreck, having regard to all the relevant circumstances (s. 42(2)).

Under Schedule 3 of the *Local Government Ordinance 1966*, one of the functions of Local Councils is to protect, preserve, prohibit or control the removal from any place of any antique artefact (s. 12(d)).

On 1 February 1992 an Act to establish the Tuvalu Cultural Council came into effect (G.N. 12/92). The purpose of the Council is to maintain, co-ordinate, implement and advise on a national cultural policy for Tuvalu which Cabinet would issue from time to time (s. 3). The Council is to consist of the Secretary for the Ministry of Home Affairs and Rural Development for the time being responsible for cultural affairs, and up to eleven other members to be appointed by the Minister (s. 5(1)). The Chairman and Deputy Chairman will also be appointed by the Minister (s. 6). The Council's powers are wide in order to carry out the functions imposed by the Act. They include employing persons considered necessary to advise it on its functions, establishing committees, and expending money or property given by Parliament, organisations or individuals (s. 4).

The Minister is empowered under section 10 to make regulations to carry out the more detailed responsibilities envisaged by the Act.

It was too early to make any assessment during the in-country review period on the protective measures envisaged by the Council for cultural property, historic sites, monuments, places of great natural beauty or buildings of special architectural and historic interest. The identification, classification and recording of such matters is expected to fall within the responsibilities of the newly created Cultural Council.

As Tuvalu is a Contracting Party to the SPREP Convention, Article 14 requires it to take all appropriate measures to protect and preserve rare and fragile ecosystems and threatened and endangered flora and fauna, and to establish protected areas such as parks and reserves. It is possible that there are areas of national importance or of outstanding beauty that could benefit from sound environmental management programmes.

Sacred sites, graves and archaeological resources are protected under traditional law and Tuvaluan concerns for cultural preservation and protection and, consequently, there will be an overlap with any legislative initiatives. The resources protected by these laws are commonly termed cultural resources as they are associated with human cultures, both

ancient and recent. Places, sites and things protected by these laws are important in the living cultures of the Tuvaluan communities, and therefore local communities could play a significant role in the management, conservation and preservation of cultural resources.

Guidelines for the conservation and preservation of cultural properties, and the listing of those eligible in a national register will alert developers, decision makers and the communities that these properties are protected.

13.2 Conclusion and Recommendations

1. Comprehensive legislation for the conservation and preservation of cultural properties should be developed. This should cover sacred and historic sites, sites of special national, spiritual and religious significance, historic buildings, and marine areas that are of national importance for conservation purposes.
2. A National Register listing cultural properties should be established.
3. Guidelines for the conservation and preservation of cultural properties should be developed and published.

14 Conclusions

The 1992 UNCED meeting in Brazil urged each nation of the world to adopt and implement appropriate measures to ensure that activities within its jurisdiction or control would be conducted with respect for nature and in a manner that accounts for the interest of future generations. The effects of economic development without environmental safeguards; rising population; intensive fishing, depleting fisheries stocks; pollution and waste disposal on land and in the marine environment, and the destruction of biological diversity, all lead to the impoverishment of the nation. It has now become widely accepted that countries should seek to comply with rules of internationally accepted environmental law, including a high standard of environmental conduct.

Countries in the Pacific have become increasingly sensitive to threats to the environment. In Tuvalu, environmental matters have been declared by Government to be a priority. Tuvalu has negotiated and become a Contracting Party to a number of regional and global environmental conventions reflecting the emphasis and directions in which it wishes to proceed in relation to the management and protection of the environment and the sustainable use of natural resources. It has enacted the Marine Pollution Act, in recognition of its international responsibilities and the problems caused by pollution of the marine environment.

Many of the existing domestic laws in Pacific Island countries have been inherited from former colonial powers, and Tuvalu is no exception. In the environmental context, much of the current law had its origins in public health concerns. Other provisions which are now relevant in relation to the environment are found in legislation covering matters such as local government, electricity and agriculture. Regulation of the environment has been substantially a function of local government and Island Councils. Bye-laws enacted by local authorities include a wide range of environmental provisions, such as controls over pollution and the layout of buildings, provision of open space and recreation areas, and management of fisheries.

In the last ten years there has been a significant change of approach to environmental matters. The international and regional pressure brought to bear through the negotiation of environmental conventions has caused some Pacific Island governments to become directly involved in addressing environmental issues at the national level rather than leaving environmental responsibilities to local government. There is also more emphasis on preventive measures, such as the setting of environmental quality objectives, and the integration of environmental measures in development projects by adopting the principles of sustainable development.

14.1 Development of New Environmental Legislation

Some Pacific Island countries are making genuine attempts to update their laws to conform to new environmental values and regional and international environmental obligations. The enactment of new environmental legislation is a political decision. The form that legislation takes should be based on policies adopted by government and recognition of the fact that

law is only one way of attempting to meet environmental objectives, and will not always be the most appropriate. A number of key issues need to be considered when the development of new environmental legislation is first proposed.

14.1.1 Policy

As there are many environmental problems that require attention, a framework of environmental policies with clear goals is the first step in providing the base for the development of action plans, from which the enactment of environmental law may flow. Policies should be expressed in a broad context and not simply focus on the prevention and control of pollution. Environmental policy must also be linked to economic and social policy. The integration of environmental aspects in economic and social development may in the long term prevent the degradation of the environment and contribute both directly and indirectly to the health and well-being of the population.

14.1.2 Financial Resources and Personnel

Successful environmental management is dependent not only upon good environmental law, but also on adequate personnel to implement the environmental management functions of government and other bodies, and to co-ordinate the resource management functions of the various Ministries and Local Councils. It is therefore necessary to plan for personnel and operational costs when considering new environmental legislation.

14.1.3 Enforcement of Environmental Legislation

In drafting legislation, the question of enforcement should always be at the forefront of consideration. It is one thing to have neat symbolic statements in legislation which prohibit particular activities with a view to protecting the environment, or require decision makers to carry out certain procedures. It is quite another to enforce them.

This review of environmental legislation for Tuvalu has revealed a number of problems in relation to the enforcement of environmental measures. This is not unusual in a small community where relatives of those in authority are involved, or where environmental measures are contrary to custom, for example, prohibitions on traditional sources of food such as birds and turtles. Enforcement needs to be accompanied by the provision of better environmental education and public awareness programmes, including the use of information bulletins and posters, and the translation of relevant parts of environmental legislation into local languages. Rather than proceeding directly to prosecution, warnings can first be given in less serious cases, and licences/permits can be suspended.

It is important, however, that enforcement difficulties be given serious consideration and a set of enforcement guidelines drawn up, indicating when it is appropriate to resort to prosecution rather than rely on alternatives. The involvement of the community in drawing up enforcement guidelines could also assist in making it aware of the problems involved in persuading people to change their behaviour. The first step, however, is to carry out a review of the relevant legislation to determine whether vigorous enforcement of particular

legal demands through prosecution and punishment for criminal offences is felt to be appropriate, or whether an alternative strategy should be adopted to bring about the desired changes of behaviour.

14.2 What the Law can Contribute

It is important not to overstress the importance of environmental law as a way of changing the behaviour of the Tuvaluan people, to make them more environmentally sensitive. For example, it is of no use prohibiting particular methods of waste disposal if other proper facilities are not available. Only where such facilities do exist, and people do not use them, is it appropriate to think about resorting to a legal response. Even then, it should only be used as a last resort, when other methods have failed, and there is a real commitment not only to enacting legislation, but also to providing the machinery to enforce it. The law alone cannot protect the environment. Environmental protection needs co-operative efforts from government, voluntary agencies and the community.

In some cases, people will change their behaviour when the consequences of what they are doing are explained to them, especially when they are directly affected, for example, in terms of their health. This points to the need for environmental education, both in the schools and in the wider community.

We also believe that customary law has an important role to play in encouraging environmentally sensitive behaviour from the people of Tuvalu, given the enforcement problems which exist when physically remote government authorities attempt to impose requirements through legislation. However, research needs to be done to identify those customary rules and practices sensitive to the environment so that they can be reinforced through education and, where appropriate, more formal legal procedures. This is a lengthy and involved exercise which the consultants were not in a position to undertake, lacking both time and expertise. Ideally it should be undertaken by members of the particular Tuvalu island communities who also have a broad expertise in environmental management. It may well be that appropriate personnel will first have to be trained.

In conclusion, we believe that issues of environmental degradation and sustainable development deserve a high level of public and government attention. Law has a role to play in contributing to the protection of the environment, but it is only one method of persuading people to change the way in which they behave. Review of environmental law should proceed in the broader context of the development of environmental policy, the restructuring of traditional institutions and the development of sensitive strategies designed to bring about fundamental changes in the way in which people think about and behave towards their environment.

Legislation, International Conventions and Treaties dealt with in the Review

Legislation

Note: At Independence, all Ordinances were redesignated Acts.

Importation of Animals Ordinance 1919

Public Health Ordinance 1926

Public Health Regulations 1926

Closed Districts Ordinance 1936

Crown Acquisition of Lands Ordinance 1954

Native Lands Ordinance 1957

Prohibited Areas Ordinance 1957

Harbours Ordinance 1957

Neglected Lands Ordinance 1959

Tuvalu Lands Code 1962

Local Government Ordinance 1966

Water Supply Ordinance 1967

Aerodromes and Air Navigation Aids Ordinance 1968

Petroleum Ordinance 1968

Foreshore and Land Reclamation Ordinance 1969

Wildlife Conservation Ordinance 1975

Merchant Shipping (Oil Pollution) (Tuvalu) Order 1975

Petroleum (Control of Storage) Regulations 1975

Plants Ordinance 1977

Fisheries Ordinance 1978

Mineral Development Licensing Ordinance 1978

Fisheries (Foreign Fishing Vessel) Regulations 1982

Marine Zones (Declaration) Ordinance 1983

Livestock Diseases Act 1984

Constitution of Tuvalu 1986

Constitution of Tuvalu Ordinance 1986

Laws of Tuvalu Act 1987

Interpretation and General Provisions Act 1988

Pesticides Act 1990

Fisheries (Trochus) Regulations 1990

Tuvalu Electricity Authority Corporation Act 1990

Marine Pollution Act 1991

Tuvalu Cultural Council Act 1992

International Environmental Conventions and Treaties

Convention for the Protection of the Ozone Layer 1985

Convention on Climate Change 1992

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Dumping Convention)

Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific 1989

South Pacific Forum Fisheries Agency Convention 1979

International Convention for the Prevention of Pollution from Ships 1973 and the 1978 Protocol (MARPOL)

United Nations Law of the Sea Convention 1982

South Pacific Nuclear Free Zone Treaty 1985

Convention on Biological Diversity 1992

Convention for the Protection of Natural Resources and Environment of the South Pacific Region 1986 (SPREP Convention)

International Convention on Civil Liability for Oil Pollution Damage 1969

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