

ORIGINAL : ENGLISH

1774

VF

SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME

K I R I B A T I

COUNTRY REPORT

SPREP Information Centre  
Received

31 JUL. 1998

SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMMEREPUBLIC OF KIRIBATICOUNTRY REPORT \*Introduction

This report is prepared along the lines suggested in your Checklist which expands upon the earlier list given in SPC Savingram No.18 of 8 February 1980.

At the outset, it should be noted that our environmental policies lack overall co-ordination and are implemented on an ad hoc basis.

1. POLICY AND IMPLEMENTATION

- 1.1 The Government of Kiribati in the National Development Plan 1979-82 (See Objective 9 Chapter 1 p.10) stated that it would introduce measures "to protect the environment from pollution and irresponsible commercial depredation".
- 1.2 The desirability of the above objective stems from the very nature of our atoll environment which is ecologically delicate and can be susceptible to a host of other hazards. In addition, the lessons learned from Banaba provided a lasting reminder to the value of environmental policies for Kiribati, particularly with regards to rehabilitation.
- 1.3 In various sectors, Government has the following policies with environmental implications :
- 1.3(a) Economic and Social Planning - Whilst it is generally accepted that the development strategy is for Kiribati to fully exploit its marine, mineral and other resources, Government is aware that uncontrolled exploitation is disastrous and therefore has proposed various conservation and rehabilitation policies to preserve the natural resource of the country. The policies cover fisheries, mineral resources and wildlife. To support these policies, Government is proposing a programme of education to promote understanding of the need for conservation, the enforcement of laws relating to wildlife and natural resource conservation and cooperation with regional governments and agencies in conservation of Pacific resources (e.g. the Regional Fisheries Agency and the Committee for Co-ordination of Joint Prospecting for Mineral Resources in South Pacific Offshore Areas).

---

\* This document was accompanied by other relevant documents. One is attached in Annex<sup>II</sup> and the other, entitled "The Impacts of Human Activities on Tarawa Lagoon", is available for consultation on request at the SPREP Secretariat.

1.3(b) Physical or Regional Planning

-

1.3(c) Design of Development Projects

There is no clear policy statement but environmental implications are considered where applicable in the design of development projects as exemplified in the case of the Betio-Bairiki Causeway where an assessment of the proposed causeway's impact on shore erosion, lagoon ecology and pollution was made prior to finalising the project.

1.3(d) Major Resource Areas

Agriculture - protection of plants from pests (Quarantine).  
Fisheries - protection of resources from depletion (purse seining prohibited).

Forestry -

Mining - rehabilitation.

Energy -

Water - protection from pollution.

1.3(e) Area Development

Rural Development and Outer Islands - The first schedule to the Local Government Ordinance of 1966 listed a whole range of functions of Island Councils which includes various environmental/conservation matters such as control of plant diseases, weeds and pests, regulation of the movement of livestock, control of fishing and related industries, prevent and control erosion of land by sea or other cause, etc. etc.

Urban Development

As - and - when needed.

1.3 Priority

Priority is yet to be finalised.

2. LEGISLATION

See Annex I.

3. PLANNING

3.1 Environmental factors are considered as-and-when appropriate in economic planning. See 1.3(c).

3.2 Land use surveys are confined mainly to Urban areas while resource surveys are undertaken on an ad hoc basis. There is in existence, a Land Planning Committee for urban areas and Christmas Island (Line Group) which co-ordinates land use policy.

- 3.3 Environmental maps and other environmental data are used in physical planning.
- 3.4 Environmental assessments are made of major activities. With the assistance of the University of the South Pacific's Institute of Marine Resources, an Atoll Research Unit was established to engage in environmental assessment of major activities.
- 3.5 In view of the country's manpower position, it is likely that it would need help in evaluating the environmental implications of development proposals, especially when the level of expertise is beyond the capacity of the Atoll Research Unit.
- 3.6 If adequate means were available, Government in an attempt to improve its environmental planning would as a matter of priority seek to consolidate its environmental policy by establishing a special body dealing with environmental subjects.

#### 4. ADMINISTRATION

- 4.1 To date, there is no national body responsible for implementing environmental policies. Implementation is carried out in isolated cases by various ministries/departments.
- 4.2 As can be expected, the arrangement in 4.1 is not effective from totality point of view as it lacked coordination.
- 4.3 Locally, there is inadequate expertise for environmental assessments.
- 4.4 There is also inadequate expertise for comprehensive physical planning.
- 4.5 In view the deficiencies in 4.3 and 4.4, there is obviously a need for expertise in both environmental assessments and comprehensive physical planning.

#### 5. ASSESSMENT

##### MAJOR ENVIRONMENTAL PROBLEMS

- 5.1 Environmental problems associated with :
  - (a) Major development projects - depending on the nature of the projects, the obvious problems are: coastal erosion, pollution, physical degradation of the environment and depletion of natural resources on which subsistence livelihood depends.
  - (b) Urban areas - Overcrowding, health, pollution.
  - (c) Rural areas - Health.

- (d) Coastal water - Contamination and erosion.  
There is no outside pressure on the country for environmental degradation through destructive resource exploitation, toxic waste disposal, etc.

#### RESEARCH AND MONITORING

Regular surveillance is now being undertaken in water contamination, lagoon pollution, etc. With the establishment of the Atoll Research Unit, regular surveillance is expected to expand to other fields.

### 6. MANAGEMENT

#### 6.1 STATUS OF RESOURCES

<u>Resource</u>	<u>Status</u>	<u>Requirements</u>
Soils	Coral Soil with low organic matter contents.	Measures to protect the soil from excessive erosion.
Water	Groundwater and catchments.	Prevention of contamination.
Crops	Very limited variety - i.e. Coconut, Babai, Pandanus, Breadfruit.	Strengthening of current Quarantine regulations.
Animal husbandry	Livestock is limited to pigs and poultry.	
Forests	N/A	N/A
Mangroves	Grow wildly on swampy coastal area of lagoon islands.	Need for protection from human activities (Mangroves are used for buildings etc)
Reefs and Lagoon		Prevention of destruction by starfish and erosion.
Fisheries	Mostly subsistence activities, but currently being developed on a commercial scale.	Conservation and prevention of overfishing.
Conservation, Parks & Reserves	Being developed.	-
Endangered species	Christmas Island Birds Sanctuary established.	Nil
Local Energy sources	Being investigated.	-
Minerals	Being investigated.	Need to prevent to avoid what had happened on Banas from recurring.
Human resources (urban & rural)	-	Improvement.
Infrastructure (transport, utilities, services)	-	Improvement of environmental implications.

## 6.2 MAJOR DEVELOPMENT TRENDS

Human Settlements - increasing mainly in the urban areas, consequently there evidently an increase in the demand for urban amenities and social services. The increase also poses environmental problems in so far as overcrowding and sanitation (from the lack of adequate amenities) are concerned.

Industrial Development - the only one at the present moment is fisheries which is still at developmental stages.

Agriculture - Agricultural activities are predominantly subsistence. Some landholdings are being consolidated on owners' own accords to take advantage of current Coconut Replanting Scheme whereby senile unproductive are felled to make way for young coconuts. Some of these trees are introduced.

Forestry -

Fisheries and Aquaculture - Fisheries Development is still in its formative stages. Plans are being finalised for the establishment of a commercial fisheries venture in 1981. As far as Aquaculture is concerned, there is presently a 40 hectares of ponds used for live baitfish culture.

## 6.3 MANAGEMENT APPROACHES

The coastal zone is not planned or managed in an integrated way. Planning to reduce the effects of disasters is non-existent. Government will be very much interested in regional contingency planning for oil spill control or other disasters.

Implicitly stated in our Family Planning programme is Government's concerns on population policies and programme related to island carrying capacity.

Land use plans, zoning or other controls are in use. There is very little rehabilitation done to degraded areas or resources.

## 7. REQUIREMENT FOR NATIONAL ACTION

### 7.1 NEW ACTIONS

Given the state of affairs with regard to environmental and conservation policies, there is an obvious need for new governmental structures and bodies to deal with environmental subjects. Coupled with this, new projects are required to correct existing problems and preventive actions to avoid new problems.

### 7.2 REQUIREMENTS

#### 7.2(a) Education

School and public information programmes on environment and conservation are non-existent.

In the field of public education, there is a definite need of effective programmes through the mass media and other materials that would help fostering people's understanding of environment and conservation policies. There is also a need for programmes or materials in schools curricula, though it may be a bit presumptuous to specify the nature of what is required at this stage.

7.2(b) Personnel

Trained manpower for environment and conservation programme is scarce, but the need is great if Government is to go ahead in this area.

We need training for :

- (i) teachers and public information officers
- (ii) technicians for pollution analysis and monitoring
- (iii) environmental planners
- (iv) environmental experts or researchers
- (v) policy makers.

7.2(c) Facilities and Equipment

Existing facilities catered exclusively to specific fields : for example - The Medical Laboratory carry out researches and monitoring in connection with general health matters, Agricultural Laboratory engaged in plants and livestock matters and Atoll Research Unit in lagoon pollution and marine life generally. In view of this, our need is obviously to do with integrating existing facilities and possibly extensions to enlarge research and monitoring capacity.

At this stage, we do not have facilities that could be available to the countries.

7.2(d) Outside Expertise

Our need for outside expertise varies considerably according to the nature of the problem. The areas in which we would probably need outside expertise are - Fisheries conservation, Coastal Erosion, Population policies in relation to island carrying capacity and general environment and conservation legislation.

7.2(e) Information

We definitely have needs for research, resource surveys land capability analysis and monitoring, though it is rather difficult at this stage to specify them.

Further information which we would require the following:  
Fisheries Conservation - Rehabilitation of degraded areas or resources - Coastal Management.

A regional environmental information service and data bank would be useful to us, given the status of our own data and information.

We certainly have a need for projects to do with the recording and application of traditional knowledge concerning resource management.

Annex II

The pollution complex developing in lagoon systems may not show any apparent adverse effects in the initial stages, but is bound to reflect in its deleterious action on the biomass, with the acceleration of urbanization and other man-made influences. Raw sewage is known to have a significant adverse effect on the water because of its high biochemical oxygen demand (BOD) and suspensoids. It has been estimated (elsewhere) that the sewage produced by one adult and discharged into a water body results in a daily oxygen demand of 115 g, equivalent to the dissolved oxygen content of 10,000 liters of freshwater!

It is true, as has been indicated by some recent studies in the Tarawa Lagoon, that the lagoon can act as an effective "nutrient trap" and the sewage discharged into the waters may be considered as enrichment, but eventually the pressure brought to bear on the various biological processes, which normally lead to production of food material, can become more and more severe. In any natural or artificial water system flushing is essential when nutrients are added. Severe depletion of oxygen can occur as a consequence of increased production and decomposition, as had definitely been shown with eutrophication in lakes. The capability of complete flushing of ponds is one of the important facets of modern aquaculture. Thus, the importance of flushing of the lagoon waters cannot be overemphasised.

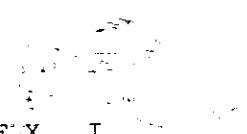
A survey arranged by the Food and Agriculture Organization of the United Nations in the South Pacific Islands indicated that generally there was no possibility of causing extinction of stocks in island ecosystems, as the larval stages on the concerned organisms are free swimming and drift about to repopulate depleted areas, provided the environment is hospitable. Recruits for replenishing stocks of reefs and lagoons may be available generally, but they cannot reestablish populations if suitable habitats to repopulate cannot be found. This may further indicate that the biological consequences of introducing nutrients will depend on the complexity of the natural system. Increased production reduces the diversity, set the biological community back to a lower successional state, increase the numbers of some organisms at the expense of others and increase population fluctuations in the system.

Under conditions of environmental stresses in a polluted eco-system, the behaviour of the organism will also be affected in different ways and the necessity of adequate flushing can never be overemphasised. Problems of migration and aggregation of populations are closely related to environmental stresses, and releasive and directive factors like availability of dissolved oxygen, food material, favourable current patterns, flow through passages, etc. The current and tidal flow patterns in the passages irrespective of their width and depth provide essential directives for the movements of organisms life fish and prawn larvae in and out of the lagoons. :

In all such cases, certain precautions against destroying the environment are essential and can be achieved if there is a concentrated approach to the problem by biologists, engineers and administrators.

---



  
A N N E X . IL E G I S L A T I O N2. A/ LEGISLATION2.01 Aerodromes and Air Navigation Aids Ordinance (Cap 1)

Section 6 : Minister may order the removal etc. of structures in controlled areas.

Section 13: Minister may make regulations prohibiting animals, etc., on aerodromes.

We have also regulations prohibiting certain acts within the aerodrome.

2.02 Closed Districts Ordinance (Cap 9)

Minister may order any island or area to be a closed district so that entry allowed only by license. There is no restriction or purpose of closing a particular island or area. This could be environmental and not necessarily for political reasons only.

2.03 Explosives Ordinance (Cap 32)

This Ordinance prohibits use, sale or possession of explosives without license.

2.04 Fisheries Ordinance (Cap 33)

This prohibits fishing by foreign vessels without license in territorial limits; operation of fish processing establishment without license and fishing with explosives, gas or poison.

We have also regulations under this Ordinance in relation to fish conservation. Such as protecting immature or pregnant crayfish. (See paragraph 2.19 below).

Annex I

2.05 Harbours Ordinance (Cap 40)

Section 22 : This prohibits vessels going into harbour carrying explosives, etc., without the harbourmaster being consulted.

Section 24 : This provides for the harbourmaster to order the removal of wrecks or other obstructions.

Section 26 : In this section, permission is required to lay-down buoys or moorings.

Section 30 : Under this section, areas may be declared "prohibited anchorages".

Section 31 : Minister may set apart certain areas for anchorage by specified vessels or classes of vessels only.

Other sections of the Ordinance prohibit the discharge of sewerage and certain other objects into the harbour.

\* 2.06 Land Planning Ordinance (Cap 48)

This Ordinance controls development and use of land.

\* 2.07 Local Government Ordinance (Cap 51)

Sections 45, 50, 116 and the Schedule are relevant for this purpose.

\* 2.08 Mineral Development Licensing Ordinance (Cap 58)

This Ordinance provides for licensing of prospecting and exploitation of minerals.

2.09 Neglected Lands Ordinance (Cap 62)

Provides for purchase and sale of neglected land.

2.10 Petroleum Ordinance (Cap 69)

This regulates importation, storage and use of petrol.

2.11 Pharmacy and Poisons Ordinance (Cap 70)

This Ordinance controls practice of pharmacy and sale and distribution of drugs and poisons.

2.12 Plants Ordinance (Cap 72)

This protects plants within Kiribati by prohibiting imports, etc.

---

\* Copies of this Legislation is available for consultation on request at the SPREP Secretariat.

- \* 2.13 Public Health Ordinance and Regulations (Cap 80)
- \* 2.14 Public Utilities Ordinance (Cap 83)  
This regulates supply of electricity and water and disposal of sewage.
- 2.15 Pure Food Ordinance (Cap 84)  
It sets standards for purity and inspection, etc.
- \* 2.16 Quarantine Ordinance (Cap 85)  
Quarantine (Maritime & Aerial) Regulations.
- 2.17 Shipping Ordinance (Cap 93)  
This provides for control and safety of shipping.
- 2.18 Traffic Ordinance (Cap 98)  
This controls traffic and licensing of motor vehicles.
- \* 2.19 Wildlife Conservation Ordinance (Cap 100)
- 2.20 Merchant Shipping (Oil Pollution) (Gilbert Islands) Order 1975 of UK  
Extends Merchant Shipping (Oil Pollution) Act 1971 of UK and Merchant Shipping Act 1974 of UK (Part 1, Sections 22-24 and Schedule 1 only) to Kiribati.
- 2.21 Nuclear Installations (Gilbert and Ellice) Order 1972 of UK  
Sections 10-17, 21, 26 and 30 of Nuclear Installations Act 1965 apply to Kiribati.
- 2.22 Civil Aviation Act 1949 (Overseas Territories) Order 1969 of UK  
Applied certain provisions of Civil Aviation Act 1949 to Kiribati.

B/ Kiribati does not need further legislation at this stage.

C/ All international conventions or treaties to which made a party while Kiribati was a colony. However, the decision on which treaties and conventions Kiribati should accede to or repudiate has not yet been made and is likely to take some considerable time.

---

\* Copies of this Legislation are available for consultation on request at the SPREP Secretariat.

---

ANNEX II

## DO WE HAVE TO WORRY ABOUT THE POLLUTION PROBLEM IN TARAWA LAGOON

by

V. Gopal Krishnan  
FAO/UNDP Project Manager

The question as to whether pollution in Tarawa Lagoon is alarming or not appears to be a common topic for discussion and more often than not, the analysis of the problem ends up in a cul-de-sac! Having had the opportunity to supervise the work of a team of biologists and chemists engaged in water pollution investigations in a developing country for about 7 years and discuss the concerned problems in International bodies like the Indo-Pacific Fisheries Council, I thought that, perhaps, some of the observations presented below may be of topical interest.

The lagoon environment is a fascinating system beset with complexities forged in by fluctuating influence of marine tides, freshwater influx, drainage, etc. The abnormal conditions brought about by man-made changes like pollution have their maximum impact on the metabolic activities in the water and consequently on photosynthesis and respiration. However, the lagoon itself is a constantly changing environment having characteristic features on its own, very different from the relatively stable conditions obtaining in the sea and rivers. The complexity in shore topography and the processes occurring on or near the shoreline make it rather difficult to establish firm standards, but some generalisations at least are possible.

The resilience and buffering capacity of coastal water systems have perhaps been responsible for the paucity of information on the effects of pollutants, mainly sewage and domestic effluents, on the natural resources of the lagoon environments in the region. The general tendency has, till recently, been to believe that because of the self-purifying capacity of tropical coastal waters, the problem of pollution is not serious in them, as compared to other systems. However, facts have proved otherwise and it has been brought to light in several countries that coastal marine pollution is not just a matter of academic interest, as once thought to be! It has been shown (as in the case of a major estuarine system in India from which I had gathered data for 5 years) that the wastes poured in many estuaries and coastal waters are far in excess of the self-purifying capacity of waters, resulting in considerable loss to natural resources.