

**ASIAN DEVELOPMENT BANK**

**TA: 6204-REG**

# **Kiribati**

## **COUNTRY ENVIRONMENTAL ANALYSIS**

**Integrating Environmental Considerations in  
Economic and Development Planning Processes**



### **FINAL REPORT**

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**December, 2006**

## Summary for Policy and Decision Makers and Other Stakeholders

1. The Asian Development Bank (ADB) uses the country environmental analysis (CEA) as the tool to assist with early incorporation of environmental considerations into the country strategy and programme (CSP) for its Developing Member Countries. The CEA provides the targeted information necessary for informed decision making on environmental constraints, needs, and opportunities, including those that impinge upon poverty partnership agreements, as appropriate. The focus is on adding value to planned and ongoing development initiatives by reducing environmental constraints and exploiting environment-related opportunities.

2. This CEA for Kiribati describes the environmental issues that are most important to Kiribati's development strategy, as well as ADB's current and possible roles to help remove the environmental constraints on sustained development and to help take advantage of opportunities offered by the environment and natural resources of Kiribati. The CEA is directed in part at the policy, programme, and sector levels, but the principal focus is on identifying how opportunities and constraints presented by the environment and natural resources of Kiribati can be addressed by way of environmentally sensitive projects in the assistance pipeline.

3. Thus the present CEA for Kiribati focuses on the general environment status and trends in Kiribati, including the role of the environment and natural resources in the economy, the key environmental constraints and opportunities, the policy, legislative, institutional, and budgetary frameworks for environmental management, and principal constraints on, and barriers to, improved environmental management. It also identifies priority improvements in policy, institutional and legislative mechanisms, as well as programmes and projects that will help to mainstream environmental considerations into economic development planning.

4. The findings and recommendations presented in this report are based on an in-depth participatory, consultative process, supported by a literature review and research. Extensive in-country consultations involved Government, communities, the private sector, non-governmental organizations (NGOs) and bi-lateral donors. The consultations included a National Dialogue where the preliminary findings of the CEA were presented and subsequently strengthened through discussion and sharing of additional information and insights. Formal and informal activities conducted as part of the CEA were also designed to strengthen understanding among key players involved in policymaking, economic planning, and environmental management, at both national and community levels. The focus was on key environmental and natural resource management issues and their influence on achieving macroeconomic, national and community development goals.

5. Both the environment and natural resources play major direct and indirect roles in the economy of Kiribati. In direct terms the following key sectors of the economy underpin economic development – agriculture, fisheries, water, energy, and tourism. In indirect terms ecological services are very important since these relate to the natural fabric of living resources which sustain economic development. It is possible to identify the large economic and social consequences of environmental changes, including the impact of low rainfall on copra production and the El Niño-Southern Oscillation on fish catch, access fees and coastal erosion.

6. Environmental concerns were confirmed by way of the consultations, and reinforced by consideration of the relevant literature. The priority environmental concerns were identified as: climate change and sea-level rise; solid waste and pollution; agro biodiversity; marine environment and resources; conservation and protection of biological diversity; environment institutional strengthening and legislation; training, environmental public

awareness and education; rapid population growth and urbanization (South Tarawa in particular); traditional knowledge systems; natural disasters; and energy conservation.

7. Extreme natural events, such as storm surges, droughts and heavy rainfall, as well as the spread of invasive species and agricultural pests and diseases, have significant impacts on the economy of Kiribati. On average, almost all of the population are affected adversely by climate-related extreme events when they occur. Moreover, this vulnerability to climate and weather impacts is critically important to economic planning given the fact that 100% of the country's population inhabit very low-lying coastal areas. These are highly prone to storm surges and extreme high tides, as well as being exposed to strong winds and wave action.

8. To illustrate the linkages between many of the current environmental concerns on the one hand, and wider economic and social development considerations on the other, several mini case studies were prepared. These were also designed to highlight some major policy considerations related to the current effectiveness of environmental and natural resource management.

9. Several key messages arise from these case studies, notably: (i) population pressures on the environment and natural resources are high; these will continue to increase as the population grows, even if there is successful implementation of the Government's new population policy; thus major improvements in environmental management policies and practices are needed; (ii) there are important linkages between environment conditions and quality of life - e.g. incidence of diarrhoea and dysentery in Tarawa is much higher than the national average, and especially so for Betio; (iii) changes in the global economy impact families and communities in very tangible ways, such as increased costs for utilities and transport as a result of higher costs for petroleum fuels; the current use of subsidies to help isolate the population from such changes is unsustainable; development of indigenous energy sources is feasible and should be seen as a high priority; (iv) some development initiatives have improved environmental conditions and thus human health and well-being, but further improvements are needed; e.g. improved drinking water quality; and (v) there are large economic and social consequences of environmental change – e.g. ocean temperatures and offshore fisheries; drought and human health; rainfall and copra production .

10. Considerable environmental and related degradation is associated with the high population densities and high demand for living marine resources in South Tarawa. However, other population centres are beginning to experience similar conditions. For example, settlement on Kiritimati Island has several emerging features similar to those in Betio, South Tarawa. It is important to ensure that these trends do not continue and that Betio-analogues are avoided in Kiritimati Island and other outer island growth centres.

11. Present efforts to protect the environment and conserve natural resources are considered by some parties to be woefully inadequate. Other parties consider these same efforts are excessive, and an unwarranted impediment to development. As is often the case when there is such divergence of strongly held opinions, there is some validity in both views. However, there are few indicators which allow the effectiveness of environmental management to be assessed. This in itself indicates the relatively rudimentary nature of environmental management in Kiribati. The situation is somewhat better when assessing the status of living marine resources. Where available, the indicators general show a decline in environmental quality and a somewhat more equivocal situation for marine resources.

12. For numerous reasons the Environment Act (1999) and associated Regulations (2001) have not delivered the environmental and related outcomes they were intended to

achieve, namely to “provide for the protection improvement and conservation of the environment of the Republic of Kiribati and for connected purposes”. One of the factors contributing to the low levels of compliance is that often individuals have no viable alternative to non-compliance. Another contributing factor is a general lack of understanding by the wider public that their actions, such as sand mining and over fishing, will often have detrimental consequences for both the environment and natural resources. A third contributing factor is inconsistency in the way the current environmental legislation, including the associated regulations, is applied. Both large-scale development projects undertaken by Government, and small-scale projects undertaken by individuals, are often carried out without the necessary approvals. Significantly, projects implemented by the private sector are often halted if the requisite approvals have not been obtained.

13. Recent attempts to address shortcomings in the environmental legislation include drafting a new bill to replace the Environment Act 1999. But the proposals for a new act were not approved by Government. Reasons given include the short time the current Act has been in force, the length of the bill, the power given to the Minister under the bill and the apparent failure to reflect the lifestyles of people in the outer islands. As a compromise, a bill to amend the current Environment Act has now been drafted, but it too has yet to receive Government approval for it to be considered by Parliament.

14. A common view in Kiribati appears to be that a strengthening of environmental and natural resources management will impede both economic development and social progress. This view could not be further from the truth – the immediate and longer-term well-being of the country, and its inhabitants, are inexorably linked to the quality of the environment in which the people live and to continued ready access to the natural resources on which they depend for their livelihoods.

15. Two significant barriers to improving environmental quality in Kiribati relate to decisions made by Government. The first is the very small percentage of the national budget allocated to environmental management – the percentage has risen from a low of 0.09% in 2001, but in 2006 it is still only 0.44%. On the other hand, some 37% of overseas development assistance targets environmental and natural resources management. One major consequence is that environmental management is largely project based, allowing little continuity in terms of either activities or staffing. In addition, the overseas development assistance related to the environment is often focused on ensuring compliance with multilateral environmental agreements. Not in all cases are global environmental priorities consistent with national and local priorities.

16. The second barrier relates to the Government’s own environmental performance. In this regard it is not showing appropriate leadership through consistent use of sound environmental management practices. Exigencies, rather than emergencies, are often given as reasons why some Government-initiated projects should not be subject to the normal development approval procedures, including environmental impact assessments. Government projects are typically large in scale and hence have at least the potential to cause significant, adverse environmental impacts. By exempting itself from the environmental regulations, either openly or more subtly, the Government is in turn creating a situation where it is exceedingly difficult to insist on full compliance by other parties. Some of the proposed amendments to the Environment Act are designed to clarify the Government’s obligations under the Act and to allow more transparency and accountability with respect to exemptions.

17. Other important concerns will demand attention in the coming years. These include building the capacity to ensure a sustainable expansion and consolidation of the private sector as well as the wider community’s full engagement in, and ownership of, the country’s economic development. There is also a need to ensure adequate capacity to sustain the

expansion and consolidation of environmental protection and natural resources preservation in the country.

18. Five priority areas for action that would result in integration of environmental considerations in economic and development planning were identified, namely: (i) increase emphasis on environmental considerations in strategic planning; (ii) enhance the environmental management capacity of key development ministries; (iii) strengthen the capacity for environmental review, monitoring and performance audits; (iv) increase voluntary compliance with environmental regulations; (v) maximise economic and social benefits from sustainable use of the environment and natural resources.

19. Planned ADB assistance was assessed in terms of its ability to address the need for action in each of the five priority areas. The assistance can go some way to addressing the needs in the priority areas. However, it is recommended that the planned assistance be complemented by addition of the following technical assistance to Kiribati: (i) incorporating environmental considerations in NDS 2008-2011; (ii) enhancing capacities of development Ministries to reduce environmental constraints; (iii) strengthening environmental monitoring and performance audits; (iv) increasing voluntary compliance; (v) maximising benefits from sustainable use of the environment; and (vi) increasing use of local resources.

20. Concepts have been prepared for each of these proposed projects.

21. It is recognised that ADB does not have the capacity to provide assistance in all of the areas identified above. Other development partners, both international and bi-lateral, are urged to consider reflecting the CEA findings in their own work programmes, either as separate initiatives or by working collaboratively with Kiribati's other development partners.

## Table of Contents

<b>Summary for Policy and Decision Makers and Other Stakeholders</b>	i
<b>List of Acronyms</b>	vi
<b>Acknowledgements</b>	vii
<b>I. INTRODUCTION</b>	1
<b>II. SITUATION ANALYSIS</b>	3
A. Role of Environment and Natural Resources in the Economy	3
B. Key Environmental Issues and Challenges	10
<b>III. Review of the Country Strategy and Programme Update for Kiribati</b>	14
A. ADB's Strategic Priorities for Kiribati	14
B. Summary of Past and Current ADB Operations in Kiribati	15
C. Assessment of the Environmental Impacts of ADB's Assistance to Kiribati	17
D. Lessons Learned from ADB Assistance	17
<b>IV. PRIORITY AREAS FOR ACTION</b>	19
A. Removing Constraints and Barriers, and Achieving Environmental and Related Improvements	19
B. Priority Areas for Action	23
C. Road Map for Environmental Management	30
D. Implications for ADB's Intervention Programmes	35
E. Implications for the Government, Communities and People of Kiribati	35
<b>V. INTEGRATING ENVIRONMENTAL CONSIDERATIONS IN DEVELOPMENT PLANNING PROCESSES</b>	42
<b>VI. CONCLUSIONS AND RECOMMENDATIONS</b>	45
<b>Annexes</b>	Separate Document

## List of Acronyms

ADB	-	Asian Development Bank
CEA	-	Country Environmental Analysis
CNO	-	Coconut Oil
CPUE	-	Catch Per Unit Effort
CSP	-	Country Strategy and Program
CSPU	-	Country Strategy and Program Update
EEZ	-	Exclusive Economic Zone
EIA	-	Environmental Impact Assessment
GEF	-	Global Environment Facility
GoK	-	Government of Kiribati
IWP	-	International Waters Programme
KAP	-	Kiribati Adaptation Programme
MOP	-	Ministry Operational Plan
NDS	-	National Development Strategy
NGO	-	Non-governmental Organization
PIPA	-	Phoenix Islands Protected Area
RERF	-	Revenue Equalization Reserve Fund
SWOT	-	Strengths, Weaknesses, Opportunities and Threats
TA	-	Technical Assistance
UN	-	United Nations

## Acknowledgements

The authors wish to acknowledge and express their sincere gratitude to the many people who assisted, supported and made valuable contributions to the preparation of this report. Foremost, Mr. Edy Brotoisworo of ADB's Pacific Department (PARAD) in Manila gave valuable support to the project. Ms Ophelia Iriberry (PARAD) also provided important assistance, as did Mr. Lope Calanog (ADB consultant). He facilitated access to essential information, including documents that assisted in preparation of the country environmental analysis.

The participatory process and consultations that underpin this technical assistance and preparation of the country environmental analysis for Kiribati would not have been possible without the support and assistance from the national focal point and other Government officials.

A special thank you to:

- Hon. Nabuti Mwemwenikarawa, Minister of Finance;
- Mr Taneti Maamau, Secretary, Ministry of Finance and Economic Development;
- Ms Nuntaake Tokamauea, Economist, Ministry of Finance and Economic Development;
- Mr Tiimi Kaiekieki, Chief Economist, Ministry of Finance and Economic Development;
- Mrs Tererei Abete-Reema, Director of Environment and Conservation, Ministry of Environment, Lands and Agriculture Development;
- Mr Ross Allen, Technical Advisor, Office of Te Beretitenti;
- Mr Nakibae Teuatabo, NAPA Advisor, Ministry of Environment, Lands and Agriculture Development; and
- Mr Marcus Hipking, Legal Adviser-Environment, Ministry of Environment, Lands and Agriculture Development.

Lastly, but by no means least, our sincere and heartfelt appreciation to the many other stakeholders in national and local government, NGOs, the private sector, and in communities and villages. These people willingly gave their time, to contribute their views and knowledge through the consultation process. Hopefully we have used to good effect the information they entrusted to us.



## I. INTRODUCTION

1. The Asian Development Bank (ADB) uses the country environmental analysis (CEA) as the tool to assist with early incorporation of environmental considerations into the country strategy and programme (CSP) of each of its Developing Member Countries. The CEA provides targeted information necessary for informed decision making to address, in an appropriate manner, environmental constraints, needs, and opportunities, including those that impinge upon poverty partnership agreements. The focus is on adding value to planned and ongoing development initiatives by reducing environmental constraints and taking advantage of environment-related opportunities.

2. Preparation of the CEA involves a participatory process at both country and ADB levels. The process is initiated before the CSP, and continues through CSP preparation. The CEA is directed at the policy, programme and sector levels, but it also highlights issues and opportunities associated with environmentally sensitive projects in the pipeline.

3. The technical assistance (TA) to Kiribati to assist with preparation of this CEA has as its main objectives the mainstreaming of key environmental considerations into economic and development planning processes, and to contribute to the alleviation of poverty in Kiribati. The TA to Kiribati is also designed to strengthen understanding among policymaking, economic planning, and environmental authorities about key environmental and natural resource management issues and their influence on achieving macroeconomic and national development goals.

4. This CEA for Kiribati therefore focuses on:

- the general environment status and trends in Kiribati, including the role of the environment and natural resources in the economy;
- key environmental constraints and opportunities;
- characterizing current climate-related risks and how these may change as a consequence of global warming (see Annex 1)
- the policy, legislative, institutional, and budgetary frameworks for environmental management;
- the principal constraints on, and barriers to, improved environmental management;
- priority areas in policy, institutional and legislative mechanisms, as well as programmes/projects that will help to mainstream environmental concerns into economic development planning; and
- identification of the main environmental opportunities associated with Kiribati's country strategy and programme update (CSPU), including recommending incorporation of environmental considerations in programmes/projects in the pipeline as well as new priority actions and programmes at the country level TA programme.

5. **Methodology.** The findings and recommendations presented in this report are based on an in-depth participatory, consultative process, supported by a literature review and research (Figure 1). In May through June, 2006, ADB fielded a mission<sup>1</sup> to Kiribati during which meetings with over 60 stakeholders (individuals and groups) were conducted. Stakeholders included Government, civil society, including non-governmental organizations (NGOs), the private sector and bi-lateral donors.

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<sup>1</sup> Prof. John E. Hay, Environmental Management Specialist, assisted by Mr Komeri Onorio, Domestic Consultant, conducted in-country activities from 18 May to 21 June, 2006. Prof. Hay's and Mr Sueasi's consultancies were supported under ADB RETA TA: 6204-REG Mainstreaming Environmental Considerations in Economic and Development Planning Processes in Selected Pacific Developing Member Countries.

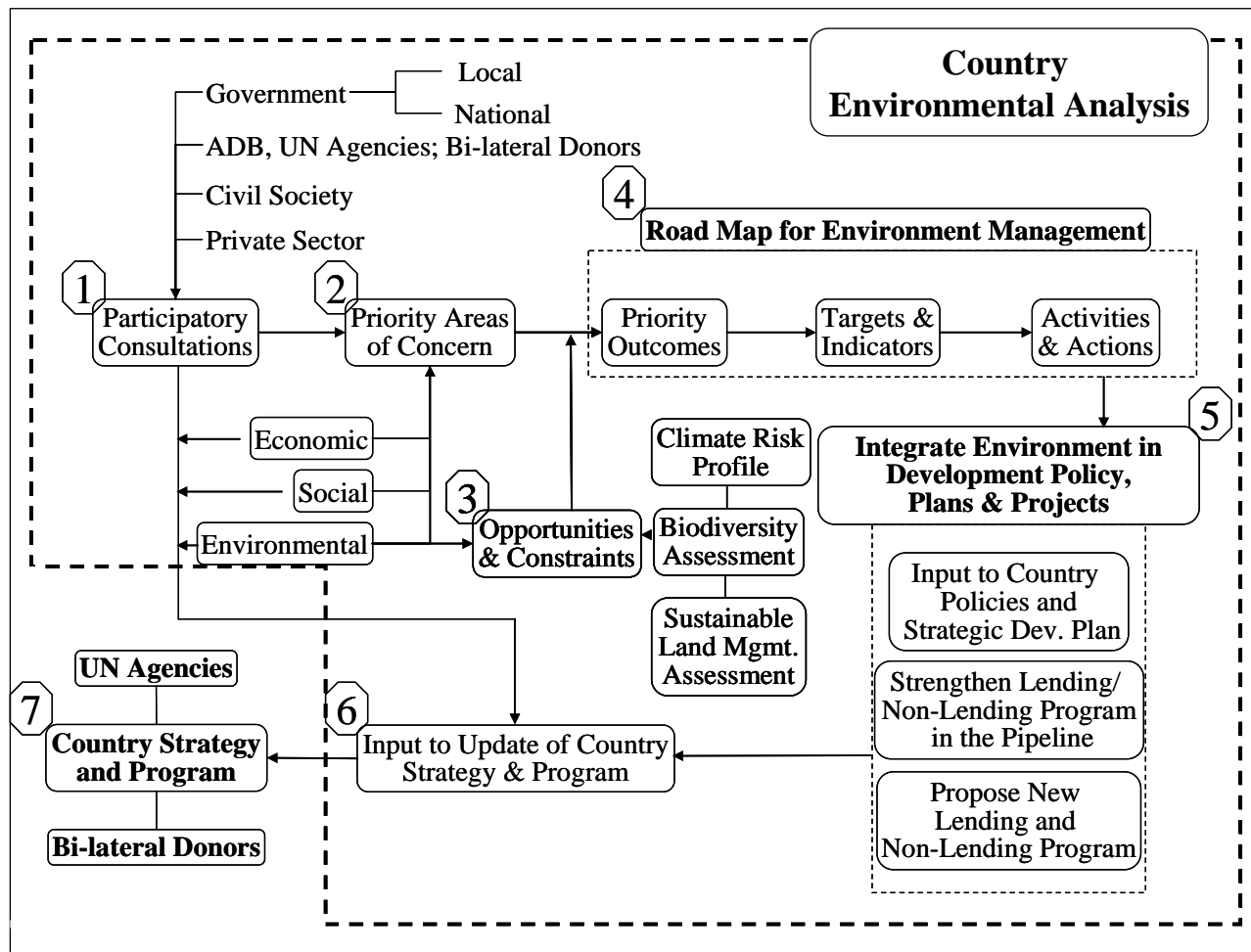


Figure 1. Process diagram for the country environmental analysis (CEA) in Kiribati.

6. The extensive consultations (Annex 2) also included organizing and hosting a one-day National Dialogue (see Annex 3)<sup>2</sup>. Around 40 key stakeholders participated in the National Dialogue (see Annex 4) and provided valuable feedback on the preliminary CEA findings and recommendations. The participants represented a wide cross-section from various sectors, including Government (elected officials and Government employees), NGOs, the private sector and bi-lateral donors. The consultations and National Dialogue helped to strengthen the preliminary findings on key environmental and related issues, and facilitated a consensus on priority areas for national initiatives and ADB assistance and on proposals for mainstreaming environment into the CSPU for Kiribati.

7. Participants in the National Dialogue, and other interested parties, were afforded the opportunity to provide further comment on a draft of the present report.

## **II. SITUATION ANALYSIS**

8. This section discusses matters related to the role of the environment and natural resources in the economy; key environmental issues and challenges; the effectiveness of environmental and natural resources management in Kiribati; and integration of environmental considerations in the economic and development planning processes of Kiribati. It also identifies and elaborates several priority areas for action.

9. The background context for this analysis is provided in Annexes 5 and 6. These contain information related to Kiribati society; geography; geology; geomorphology; climate; land tenure; the economy; governance; institutional, policy, legal and budgetary frameworks; performance indicators related to the economy, the environment and to sustainable development; and the nature and coordination of external assistance related to the environment.

10. Also as background, a review of ADB's strategy and programme for Kiribati was undertaken. This gives details of ADB's strategic priorities for Kiribati; a summary of past and current ADB operations for Kiribati; assessment of the environmental impacts of ADB's assistance to Kiribati; and lessons learned from the assistance provided by ADB to Kiribati.

### **A. Role of the Environment and Natural Resources in the Economy**

11. Both the environment and natural resources play major direct and indirect roles in the economy of Kiribati. In direct terms of the following key economic sectors of the economy underpin economic development – agriculture, fisheries, water, energy, and tourism. In indirect terms, ecological services are very important since these relate to the natural fabric of living resources which sustain economic development.

12. Figure 2 highlights the contribution of agriculture, fisheries and tourism to the economy and that a major portion of household income is from subsistence agriculture. The three sectors identified above depend on natural services provided by the environment. This is in terms of stable and fertile soil as in the case of agriculture, healthy marine ecosystems which increases fish and shell fish stocks for the fishing industry, and the tourism assets of unspoilt natural scenery, endemic species, native habitats and healthy communities.

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<sup>2</sup> The National Dialogue was held on June 20, 2006.

### GDP 2005 + EEZ Access Fees

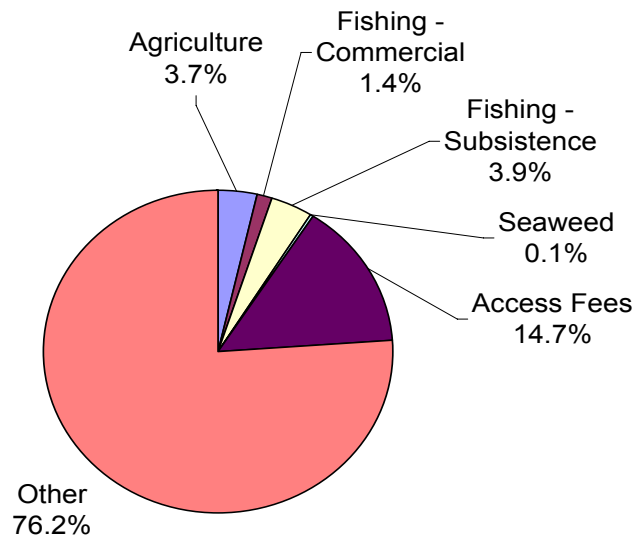


Figure 2. Contribution to national economy of some key economic sectors and EEZ access fees in 2005.

13. The electric power requirements on Tarawa and Kiritimati are provided by diesel generation. Elsewhere small generators and photovoltaic systems are used. The sustainability of the supply of diesel powered electricity, and of transportation, depends heavily on the affordability and access of fossil fuel from overseas markets.

14. Most of the country's water supply is from underground freshwater lenses from which water is extracted by individual households. The South Tarawa water supply is pumped from groundwater lenses and also uses rainwater harvesting. Water lenses are subject to contamination from uncontrolled waste and pollution, and rainwater harvesting relies on the availability of rainwater catchments and a sustained and adequate rainfall. The sustainability of the supply of freshwater depends on maintaining the quality and integrity of freshwater lenses from land and surface water drainage pollution and upon the extreme effects of climate change.

15. Extreme natural events, such as storm surges, droughts and heavy rainfall, as well as the spread of invasive species or agricultural pests and diseases, have significant impacts on the economy. On average, almost all of the population are affected adversely by climate-related extreme events when they occur.

16. This vulnerability to climate and weather impacts is critically important to economic planning given the fact that 100% of the country's population inhabit very low-lying coastal areas which are highly prone to storm surges and extreme high tides and exposed to strong winds and wave action.

17. The following examples highlight the economic and social benefits for Kiribati when sustainable management of the environment and natural resources is given greater priority by the Government, the private sector, communities and other parts of civil society.

18. **Inshore Fisheries.** With around 90% of households in Kiribati engaged in some form of fishing, and a high and growing concentration of households in South Tarawa,

there are large and increasing pressures on living marine resources. The catch per unit effort (CPUE) of several important fishery species has declined significantly. Not only has abundance decreased, but fish have become smaller in weight and size. Studies also show that fishing has removed most of the older and larger female fish while the younger fish caught do not have a chance to spawn and contribute to the next generation's stock. Studies on Kiritimati Island found a sex ratio of 43:1 (female to male) for bonefish at the tourist fishing sites where catch and release is practiced. This female majority indicates a healthy reproductive population. However, the trend was reversed at sites where local fishermen harvested the species. But even recreational fishermen now report that the bonefish population on Kiritimati is declining. In the 1980s a fisherman's catch amounted to 50 fish per day, but nowadays, the catch is only 10 per day.

19. The foregoing suggests that, if the present high reliance on inshore marine resources for daily sustenance is to continue, concerted action is required to maintain and increase the sustainability of the inshore fisheries. This includes building on and encouraging greater acceptance at community level of initiatives that: (i) reduce pollution of the marine environment, particularly from land-based sources; (ii) discourage the use of destructive fishing equipment and methods (e.g. impose a minimum net mesh size of 5 cm and ban *te ororo* (splashing)); (iii) establish additional marine protected areas including closed fishing seasons prior to spawn and aggregate runs to the ocean for migratory fish; (iv) cultivation of key species for spawning and release; and (v) assess and monitor the state of the inshore fisheries.

20. **Offshore Fisheries.** Figure 3 emphasises not only the significance of offshore fisheries to Kiribati in terms of both catch (most of which is exported) and earnings from access fees, but also the large interannual variability. Over the last twenty-seven years the access fees have averaged about 10% of the value of the catch while the fees constituted 60% of Government revenue. The Revenue Equalisation Reserve Fund (RERF) has been used to help smooth out the interannual variations, thereby providing a more consistent source of revenue for the public sector.

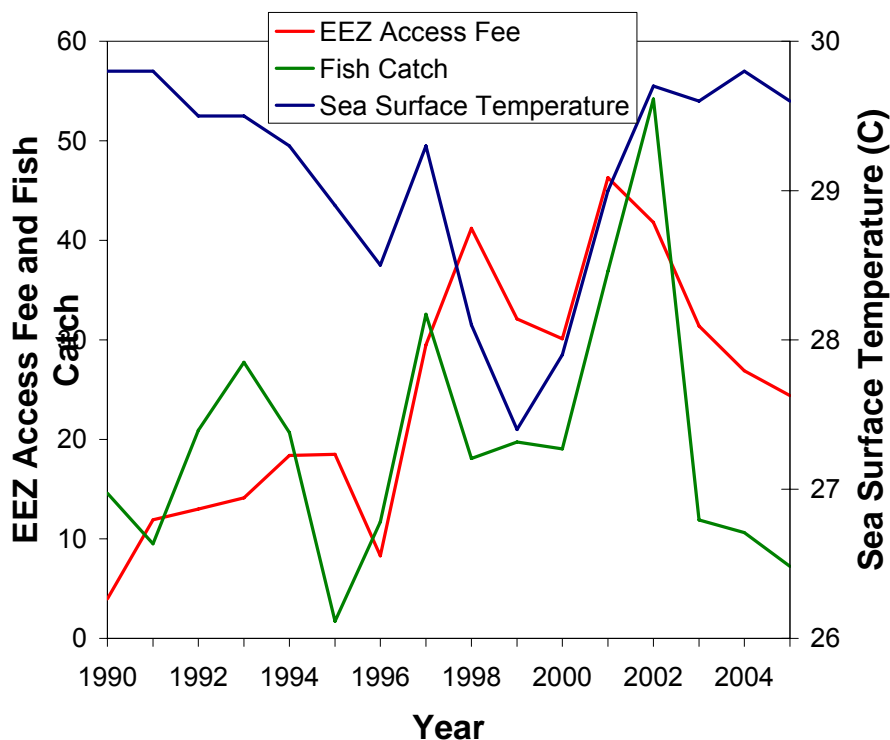


Figure 3. EEZ access fees (\$ million), fish catch (10<sup>4</sup> tonnes) and sea surface temperatures (degrees Celsius). Sources: MFED and NOAA PODAAC.

21. Much of the interannual variability is associated with changes in oceanic circulation patterns, notably the dominance of El Niño or La Niña (Figure 4). While there is currently little skill in predicting the onset of either of these contrasting circulation regimes, there is considerable skill in characterising the subsequent evolution of the regime once its occurrence becomes apparent. Such knowledge could be applied to not only ensuring more effective management of the offshore fisheries itself, but it could also be used to help optimise the issuance of licences to distant fishing nations and the flow of funds in to and out of the RERF. As noted above, there is an urgent need to investigate and explain the recent declines in both income from Exclusive Economic Zone (EEZ) access fees and commercial fish catch despite sea surface temperatures remaining consistently high.

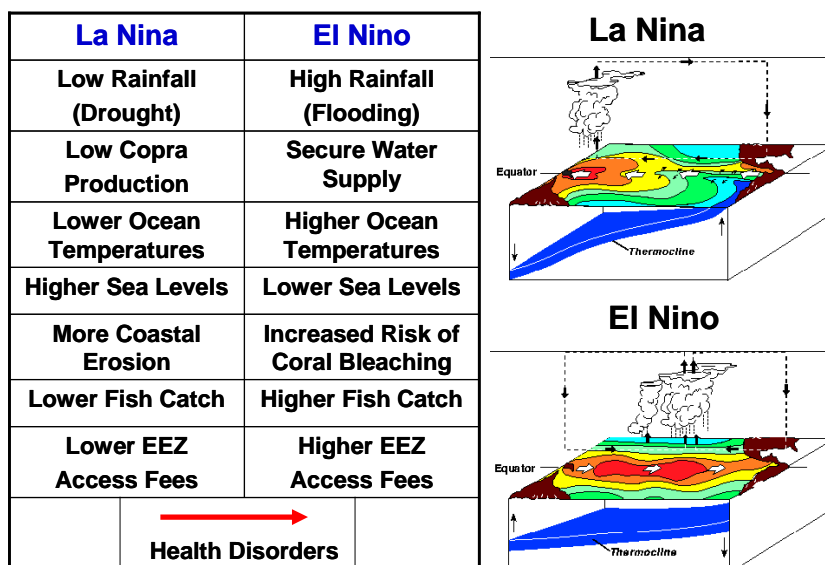


Figure 4. Economic and social impacts of La Niña and El Niño for Kiribati.

22. **Seaweed Cultivation and Export.** Figure 5 shows that seaweed cultivation and export has been established as a significant economic activity, with associated social benefits, especially for outer islands communities. Seaweed is grown in undisturbed lagoon waters, for export to several countries in Asia and Europe. Over 90% of seaweed production for Kiribati comes from Fanning Island. All seaweed is shipped to Tarawa and onto the main market in the Philippines. The Government subsidises seaweed production, currently contributing 15 cents to the 60 cents per kilogram paid to producers. Delays in the processing of payment warrants from Tarawa means the Atoll Seaweed Company relies heavily on issuing credit notes to producers, rather making immediate cash payments.

23. Despite the export value of the crop remaining high, at around AUD \$800 per tonne, production has declined in recent years. This decline has been attributed to over-cultivation in some locations and to unattractive prices in other locations, relative to earnings from tourism, shop-keeping and public sector employment. But a possibly more plausible reason is that the El Niño conditions that have dominated since 1999 have been associated with high rainfall, leading to lower salinity of the lagoon waters, as well as elevated water temperatures in the lagoon. Production in the early 1990s may also have been lower as a result of such conditions, though the industry was in its initial stages of development at that time.

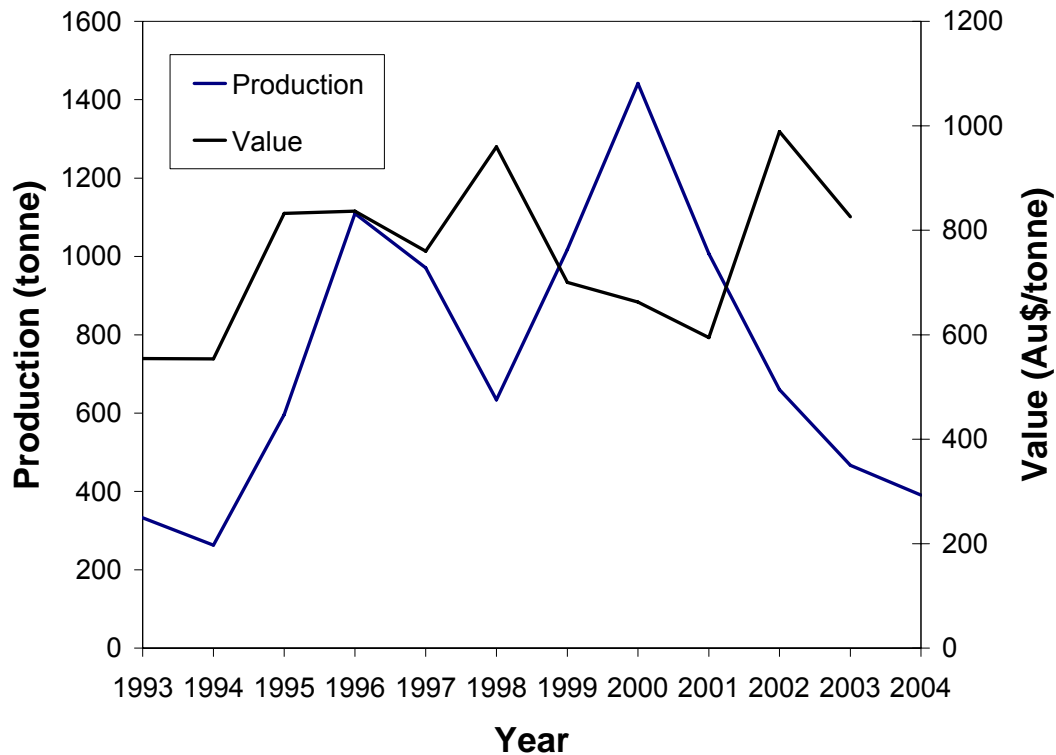


Figure 5. Production and value of seaweed in Kiribati.

24. There is a potential to increase seaweed production, bringing both economic and social benefits. This might involve the use of varieties that are more tolerant of low salinity and high temperature conditions, and improved management procedures, including mechanisms for more prompt and consistent distribution of payments to producers.

25. **Copra Production.** Box 6 (Annex 7) highlights an opportunity to revitalise the production of copra in Kiribati and, in doing so, to bring about major improvements in the national economy as well as in outer island communities. While production of copra is largely suited to an atoll environment, two constraints on production are becoming increasingly apparent, namely: (i) low world prices for copra and poor prospects for increased prices in the future; and (ii) local conditions including aging trees, low rainfall (Box 6), increasing salinity and declining fertility of the soil, and major bushfires.

26. As with seaweed, the Government subsidizes the copra price by 15 cents per kilogram and is currently paying copra cutters 60 cents per kilogram. The Kiribati Copra Cooperative Society also experiences significant delays in obtaining approvals from Tarawa for payments of cash to local producers.

27. The local use of coconut oil as a fuel would reduce the current dependency on world copra prices. The price paid for copra would become more closely linked to the true costs of production than to the price of crude oil. This would result in substantial economic and social benefits, both nationally and more locally. As noted in Box 6, the increasing senility of the coconut trees requires urgent attention, as do the procedures currently used to pay producers. Given the dispersed nature of copra growing areas in Kiribati, consideration might be given to developing alternatives to the current centralised processing of the copra. If the production of coconut oil took place in the outer islands the cost of production would be much lower since copra need not be transported to Tarawa. Labour costs would also be lower. The copra cake can be used as fertilizer and also, if of sufficient quality, for pig and chicken feed. The process waste can also be used as fuel for

cooking and other fires, thereby reducing pressure on vegetation that is providing coastal protection and other benefits.

28. Currently there is chronic under utilization of copra. The potential to increase the production of coconut oil means that the oil could also be utilized in generators, outboard motors and vehicles. Furthermore, the extraction of coconut oil is of an appropriate scale, and the cost of the technology is not excessive. The spin-offs from this industry means that there is potential for significant environmental, social and economic benefits given that the oil also has other subsistence and commercial uses.

29. **Nature-based Tourism.** Visitors to Kiribati, including tourists, already make major contributions to the national and local economies. In 2005 4,567 visitors entered Kiribati, spending an estimated AUD \$3.4 million. In addition, tourist ships made 35 calls to Fanning Island, raising over US \$.5 million through the cruise head tax. Details of the number of calls made to Kiritimati Island, and the taxes charged, are not available, but is believed to make a significant contribution to overall tourism receipts.

30. Many lessons can be learned from considering the viability of past tourism development initiatives, especially those in Tarawa and Kiritimati Island. Long-term and integrated planning and operations are required if tourism ventures are to be economically, socially and environmentally sustainable. This has been recognised in the proposals to develop Kiritimati Island as an outer island growth centre. Thus Government has proposed a “whole of Government, whole of island” plan which clearly sets out the vision, outcomes and what is to be achieved by each sector and through infrastructure development and land releases. Achievements, and the plan itself, would be reviewed by Cabinet every two years. While tourism is seen as the Island’s main potential driver of economic growth, it is also recognised that tourism development targets will be met only if, amongst other considerations, the infrastructure on which tourism depends is in place and functioning appropriately. Thus tourism development in Kiritimati Island requires parallel investments in water supply, environmental sanitation, waste management, power supply, transport (maritime, aviation and roads) and telecommunications.

31. A similar approach is required if the recently established Phoenix Islands Protected Area (PIPA) (see Annex 5) is to do more for Kiribati than demonstrate a national commitment to the conservation of global biodiversity. Economic and social benefits will accrue to Kiribati only if the environment and natural resources of the PIPA are utilized in a sustainable manner, consistent with the protected status of the area.

32. This can only occur through the development of a substantial nature-based tourism initiative. The investment required is likely to exceed the financial resources available from within the public sector. For this and other reasons the development of tourism based on the PIPA is best pursued using a public-private partnership model, utilising venture capital and the tourism expertise available in the private sector.

33. **Environmental Quality and Human Health.** Box 2 (Annex 7) highlights the strong relationships between environmental quality and human health. To date in Kiribati, as in many other countries, action has been taken only when there are substantial numbers of people with infections and other health problems attributable to poor environmental conditions. In general, such interventions have had at least moderate success, but they come at a high price in terms of both direct medical costs and indirect social and other consequences, such as high rates of absenteeism.

34. A more proactive, preventative approach is not only cost effective in the medium term, but also reduces hardship and increases quality of life. From an environmental management perspective, prevention can be practiced at two key levels. The first is by



ensuring that new infrastructure and related developments are assessed in terms of their potential to impact adversely on environmental health. All reasonable and appropriate efforts need to be taken to minimise adverse impacts on human health while at the same time maximising opportunities to improve environmental health. Such procedures are best incorporated in environmental impact assessment requirements, by extending them to include the need for a health impact assessment.

35. The second level involves environmental monitoring, as an integral part of health risk assessment. Environmental monitoring in a public health context is essentially non-existent, except for water quality testing as a result of complaints by the public or requests by medical staff (Figure 6). In the past there have been brief periods when water quality monitoring has been systematic and comprehensive, at least for Tarawa. If monitoring was conducted on a sustained basis, as part of a broader health risk assessment programme, many environmental health problems could be identified and addressed before they reached epidemic levels. Moreover, such monitoring would also show if development policies and specific initiatives were achieving the desired outcomes, or needed modifying in order to do so.

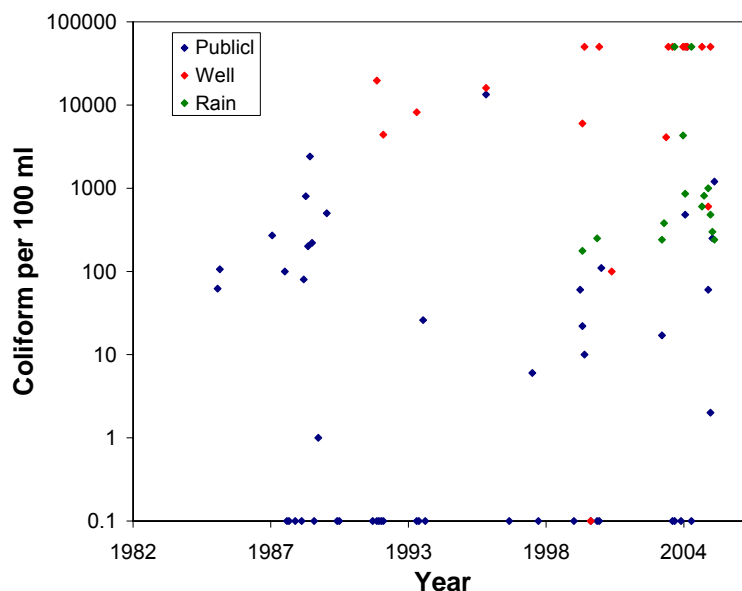


Figure 6. Total faecal coliform counts in public, well and rain water sources, South Tarawa.

36. **Sand and Construction Aggregate.** Box 5 (Annex 7) has highlighted the need to identify and develop a sustainable source of supply of sand and construction aggregate, especially in Tarawa. Estimates suggest that some 45,000 m<sup>3</sup> of sand and aggregate are being removed from beach and other land areas of Tarawa each year. Planning is now well advanced to dredge aggregate on a sustainable basis from a location in Tarawa lagoon.

37. But establishing a supply of sand and aggregate that is extracted on a sustainable basis is considering only part of the system. There is also a need to avoid adverse economic and social consequences for the many individuals and families who currently have access to free sand and aggregate as well as for those who depend on sand and aggregate sales for a cash income. If this source of income is terminated suddenly, considerable hardship is likely to result. Such effects will be exacerbated if the price of these materials increases above current levels.

38. Thus attention needs to be given not only to ensuring a sustainable supply, but to also ensuring that changes to pricing and the supply chain do not cause adverse economic

and social consequences at the level of the family and individual. The information gathered in surveys undertaken by the Ministry of Fisheries and Marine Resources Development (Box 5, Annex 7) can inform the development of policies and plans to reduce any adverse consequences. These are likely to include some families and individuals having roles to play in the distribution of sand and aggregate, rather than relying solely on a centralised distribution system. Other families and individuals may need assistance to identify and engage in alternative forms of income generation.

## **B. Key Environmental Issues and Challenges**

39. The environmental issues and challenges facing Kiribati have been assessed comprehensively and documented clearly in earlier studies. A recent synthesis of these studies was undertaken for the International Waters Programme (IWP), funded by the Global Environmental Facility (GEF)<sup>3</sup>. The priority environmental concerns were identified as:

- Climate change and sea-level rise;
- Solid waste and pollution;
- Agro biodiversity;
- Marine environment and resources;
- Conservation and protection of biological diversity;
- Environment institutional strengthening and legislation;
- Training, environmental public awareness and education;
- Rapid population growth and urbanization (South Tarawa in particular);
- Traditional knowledge systems;
- Natural disasters; and
- Energy conservation.

40. In 2001 a similar IWP study identified the following as the priority environmental concerns:

- International Waters EEZ limits (high seas);
- Solid wastes (especially in South Tarawa);
- Water storage and protection (especially in South Tarawa);
- Proper sewerage disposal;
- Marine and fish resources protection; and
- Mangrove protection conservation and management.

41. It is apparent that there have been substantial changes in the environmental and related concerns, likely at least in part due to the significant improvements in water supply and sanitation in South Tarawa as a result of the SAPHE<sup>4</sup> and related initiatives.

42. **Case Studies.** To illustrate the linkages between many of the current environmental concerns on the one hand, and wider economic and social development considerations on the other, several mini case studies were prepared (Boxes 1 through 9, Annex 7). These are also designed to highlight some major policy considerations related to the current effectiveness of environmental and natural resource management.

43. Several key messages arise from these case studies, notably:

- Population pressures on the environment and natural resources are high; these will continue to increase as the population grows, even if there is successful

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<sup>3</sup> Priority Environmental Concerns for Kiribati. Kiribati International Waters Project, 2005, 53pp.

<sup>4</sup> Sanitation and Public Health Education – assistance provided to Kiribati by ADB

implementation of the Government's new population policy; thus major improvements in environmental management policies and practices will still be needed;

- There are important linkages between environment conditions and quality of life - e.g. the incidence of diarrhoea and dysentery in Tarawa is much higher than the national average, and especially so for Betio;
- Changes in the global economy impact families and communities in very tangible ways, such as increased costs for utilities and transport as a result of higher costs for petroleum fuels; the current use of subsidies to help isolate the population from such changes is unsustainable; development of indigenous energy sources is feasible and should be seen as a high priority;
- Some development initiatives have improved environmental conditions and thus human health and well-being, but further improvements are needed; e.g. improved drinking water quality; and
- There are large economic and social consequences of environmental change – e.g. ocean temperatures and offshore fisheries; drought and human health; rainfall and copra production (see Figure 4).

44. Many of the environmental and related concerns are associated with the high population densities and high demand for living marine resources in South Tarawa. However, other population centres are beginning to experience similar conditions. For example, settlement on Kiritimati Island has several emerging features similar to those in Betio. The perception of increased economic opportunity and improved lifestyles means that migration to Kiritimati is strong. But Government land has not been released for approximately four years. This has given rise to overcrowding in households within the existing villages. In some cases squatters have begun building houses on Government lands. Household size is high (average of 6.5 people per house)<sup>5</sup> and there are reports of up to 15 people staying within one Government house<sup>6</sup>. This places pressure on households and may lead to unhygienic living conditions.

45. In 2005 some 15% of Kiritimati Island inhabitants were diagnosed with diarrhoea. Of those, nearly half were found to have dysentery.<sup>7</sup> Currently there is a low level of awareness regarding the need to regularly maintain septic tanks. This results in many households having tanks which are leaking and/or needing to be de-sludged. The problem is exacerbated by a lack of understanding of groundwater interactions - people are not aware of the risk that toilets, pigs and rubbish pose to the quality of well water<sup>8</sup>. It is important to ensure that these trends do not continue and Betio-analogues are avoided in Kiritimati Island and other outer island growth centres.

46. Growing pressures on living marine resources also highlight the need for strong policy interventions, including acknowledgement of important interactions between the largely subsistence in-shore fishery and the commercial off-shore fishery. There is anecdotal evidence that when distant fishing nations are highly active in Kiribati's EEZ the catch per effort for artisanal fishers undergoes a notable decline. The economic consequences for these fishers are often exacerbated as a result of by-catch from the off-shore fishery being sold in local markets, reducing the prices artisanal fishers can obtain for their catch. The recent declines in both income from EEZ access fees and commercial fish catch (Figure 3) are also a concern. This is especially so given that Figure 3 also shows that sea surface temperatures have been consistently high. This usually indicates good catch levels (Figure 4). Two possible explanations require urgent investigation

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<sup>5</sup> Government of Kiribati (2006) *'Population Census 2005 Preliminary Figures'*.

<sup>6</sup> ADB (2006) *TA No. 4456 – KIR: Preparing the Outer Islands Growth Centers Project, Kiribati - SK*

<sup>7</sup> These are reported cases. It is estimated that there is at least the same numbers or more who are affected and use village doctors.

<sup>8</sup> ADB (2006) *TA No. 4456 – KIR: Preparing the Outer Islands Growth Centers Project, Kiribati - SK*

because of their far reaching implications. These are: (i) distant fishing nations have decided against fishing in the Kiribati EEZ, despite potential catches being high due to the prevailing ocean temperatures; and (ii) the catch is low due to depleted fish stocks.

47. **Effectiveness of Environmental and Natural Resource Management.** Present efforts to protect the environment and conserve natural resources are considered by some parties to be woefully inadequate. Other parties consider these same efforts are to be excessive, and an unwarranted impediment to development. As is often the case when there is such divergence of strongly held opinions, and as the following discussion will show, there is some validity in both views.

48. There are a few indicators which allow the effectiveness of environmental management to be assessed. This in itself indicates the relatively rudimentary nature of environmental management in Kiribati. The situation is somewhat better when assessing the status of living marine resources. Where available, the indicators generally show a decline in environmental quality and a somewhat more equivocal situation for marine resources.

49. While there has been modest improvement in the quality of drinking water in Betio (Figure B2.1, Annex 7), overall coliform levels remain unacceptably high (Figure 6). The latter figure also exemplifies the wider issue that, where it occurs, environmental monitoring is not undertaken in a systematic manner. This makes it difficult to identify trends in environmental quality and thus the efficacy of current management initiatives as well as the possible need for strengthened initiatives. For example, rather than there being a systematic monitoring programme, water quality in South Tarawa is usually tested only when there is a complaint, often related to public health issues. Lagoon and ocean water quality is rarely examined.

50. As noted above, the situation is somewhat better with regard to living marine resources. For example, the Ministry of Natural Resources undertakes week long surveys of the artisanal fishery in the populated islands. While there are significant variations in the frequency and timing of these surveys, they do show that catch per unit effort (CPUE) has generally increased across the 14 islands for which there have been at least two surveys (Figure 7). Studies suggest that fish yields in excess of 5 kg/hr/fisher are representative of unfished or lightly fished areas. Yields of 1 – 2 kg/hr/fisher generally indicate more intensively fished systems. On this basis Figure 7 indicates that most artisanal fisheries in Kiribati are currently only lightly fished. However, some studies and anecdotal evidence suggest otherwise.

51. Importantly, based on available data it is not possible to say if fish abundance has increased or if fishing practices have changed in ways that increase productivity. Increased use of fine mesh nets has been noted, but again the contribution to the trends observed in Figure 7 is unclear.

52. One of the few exceptions to the general trend shown in Figure 6 is South Tarawa. It is reasonable to conclude that the high demand on living marine resources in South Tarawa is contributing to reduced abundance. During the one week survey in 2002 over 160,000 kg of fish was harvested, but this represents a decline in catch per fishing household from 90 kg in 2000 to only 44 kg in 2002. On the other hand, the number of gill nets in South Tarawa increased from 1700 to over 2500 in the same period. Overall, 70% of the annual catch in South Tarawa is sold, generating an average income of \$230 for full time fishing households and \$59 for part time fishing households.

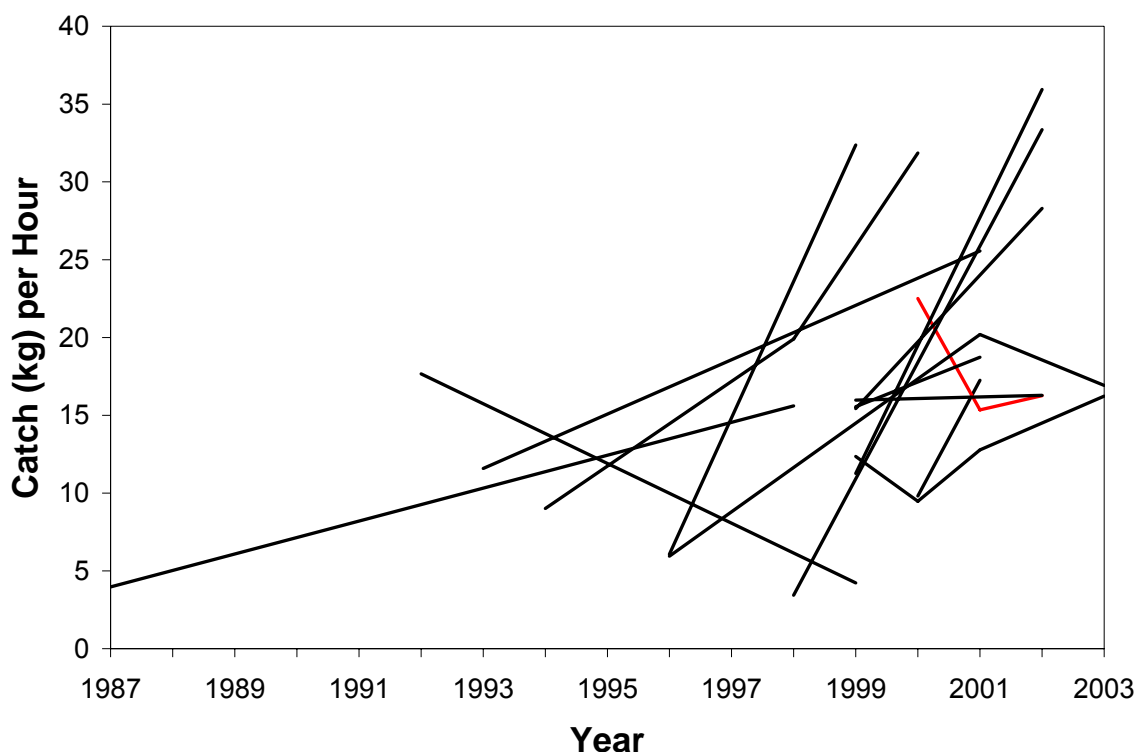


Figure 7. Catch per hour, based on the week long artisanal fish surveys conducted for individual islands in Kiribati. Catch includes ocean, lagoon, reef fishing and collecting. Lines join the catch per hour values for sequential surveys on the same island. The line for South Tarawa is shown in red. Source: Ministry of Fisheries and Marine Resources Development.

53. For numerous reasons the Environment Act (1999) and associated Regulations (2001) have not delivered the environmental and related outcomes they were intended to achieve, namely to “provide for the protection improvement and conservation of the environment of the Republic of Kiribati and for connected purposes”. These reasons include:

- While the short title of the Act suggests that it deals comprehensively with the environment but in fact it focuses principally on industrial developments and pollution and does not deal with important environmental management themes including:
  - litter;
  - pigs;
  - black smoke;
  - water;
  - coastal erosion;
  - coral reefs;
  - protected areas;
  - protected species; and
  - international commitments;
- The Act states that it will come into operation on a date notified by the Minister, but no such notice has been found in the Government Gazette; courts require records of such notices and evidence that they have been brought to the attention of the public; if no such notice has been published in the Gazette a court would probably hold that the Act is not in legal operation;
- In the Act the definition of development includes only an enterprise or undertaking for industrial or commercial purposes; this severely limits the Act as most developments in Kiribati are for public purposes;

- Definitions of ‘pollutant’ and ‘pollution’ are premised on substances being injurious or detrimental to the environment or human health; proof of such matters would normally require expert evidence; this is difficult and costly to obtain; it is also very difficult to prove beyond reasonable doubt; and
- the Act requires the Minister to obtain the advice of Cabinet every time the Minister wants to take any action in relation to administering the Act.

54. Examples of the difficulties with enforcing the existing Environment Act and Regulations are provided in Box 9 (Annex 7). Overall, levels of compliance with the legislation are very low and there is no effective enforcement. In part this is because the Act is unlikely to be enforceable (see above). Violations reported to the Attorney General’s office have never been prosecuted.

55. One of the factors contributing to the low levels of compliance is that often individuals have no viable alternative to non-compliance. For example, under the Environment Regulations beach toileting is prohibited. But when only 27% of households in South Tarawa have a flush toilet, and 33% a latrine<sup>9</sup>, and there are no public toilets or those that exist are generally unfit for human use, people have no option than to use the beach, bush or sea. Nearly 3000 of the 5000 households in South Tarawa report making use of one or more of these areas for toileting.<sup>10</sup> Given the high density of population, such traditional practices are no longer sustainable, for health and other reasons (see Box 2, Annex 7). A similar problem exists with the mining of aggregate (Box 5, Annex 7). Until alternative sources of supply are made available, individuals and families have no option but to extract material from the local beaches and adjacent areas. Even when sand dredged from Tarawa lagoon on a sustainable basis does become available, there is no guarantee that small scale sand mining will stop. One reason is that the sale of sand mined locally is a major source of income for some families. Unless they can find alternative income sources there will be pressure on them to continue mining, selling the aggregate at a price that undercuts the price of dredged sand.

56. Another contributing factor is a general lack of understanding by the general public that their actions, such as sand mining and over fishing, will often have detrimental consequences for both the environment and natural resources. A third contributing factor is inconsistency in the way the current environmental legislation, including the associated regulations, is applied. Even large-scale development projects undertaken by Government and small-scale projects undertaken by individuals are often carried out without the necessary approvals. Those implemented by the private sector are often halted if the requisite approvals have not been obtained.

### **III. REVIEW OF THE COUNTRY STRATEGY AND PROGRAMME UPDATE FOR KIRIBATI**

57. Kiribati joined ADB in 1974. The CSPU was last updated in 2006 and covers the period 2006-2007<sup>11</sup>. The update focused on: (i) improving the economic environment in the outer islands, particularly Kiritimati; and (ii) strengthening access to health services and water resources throughout the country.

#### **A. ADB’s Strategic Priorities for Kiribati**

58. ADB’s operational strategy in Kiribati is consistent with the current ADB strategy for the Pacific<sup>12</sup> and continues to support the Government’s National Development Strategies

<sup>9</sup> 2005 Census, Government of Kiribati

<sup>10</sup> 2005 Census, Government of Kiribati

<sup>11</sup> ADB, 2006. Kiribati Country Strategy and Programme Update (2006-2007).

<sup>12</sup> ADB, 2000. A Pacific Strategy for the New Millennium. Manila.

(2004-2007). The ADB strategy for Kiribati ADB will support the Government's efforts to balance growth more evenly throughout the country. The aim is to relieve the current stresses in the capital atoll (Tarawa), while supporting improved social services. ADB also will support efforts to improve the conditions in urban areas by reducing population pressures through development of the outer islands, and improving social conditions. Assistance to Kiribati in its development objectives is being provided through ADB's strategy for fighting poverty in the Pacific region, which aims to create the conditions for pro-poor economic growth by promoting sustainable resource management and employment opportunities and also by enhancing social development.

59. For 2006-2007 ADB assistance is emphasizing the development of outer island growth centres, particularly Kiritimati Island. Special attention is being paid to the land and water issues that raise environmental concerns on this island, as well those across the country. The overall objective of the assistance is to put in place the high-priority infrastructure, such as roads, power, water supply, and a new multipurpose port to enable rapid economic growth on Kiritimati. Economic growth opportunities will attract new settlers, thereby taking pressure off the overcrowded areas in Tarawa. In addition, further assistance will be provided to address fundamental social concerns and health threats.

60. More specifically, assistance will be provided to implement the national population policy. The goal is to slow population growth in Kiribati as a whole, and particularly in South Tarawa, by strengthening the recently established Population and Development Coordination Committee (PDCC), and assisting it in the functional establishment of the Population Development Unit (PDU). Assistance will also be provided to facilitate implementation of a land development programme for Kiritimati Island. This is intended to release 600 plots over the next four years, to meet the demand for housing, industry, business, and tourism uses, while protecting the unique environmental integrity of the island. The assistance will help put in place the main implementation components of the agreed land management system, resulting in the preparation and implementation of a land development programme for Kiritimati Island that can be replicated annually by key stakeholders based on good governance principles.

61. In addition, further water resource development assistance is proposed. This will help improve the health and well being of the Kiribati population, in support of the Millennium Development Goals, by providing sufficient clean drinking water (improving the quality and increasing the supply of fresh water) in selected growth centres. The assistance will prepare an investment project to implement priority water supply and sanitation projects identified in earlier assistance provided by ADB to support national water resources assessment and management. The proposed assistance will also help address institutional capacity issues in the water and environment sectors, and provide essential infrastructure for improvements to water and sanitation management services.

## **B. Summary of Past and Current ADB Operations in Kiribati**

62. Since Kiribati joined ADB in 1974 it has received 6 loans totalling US\$15.140 million and 38 TAs totalling \$11.411 million. All loan funds came from the Asian Development Fund. No loans and one TA of \$0.8 million were active as of 30 April, 2006. Table 1 shows cumulative ADB lending and technical assistance as of the same date. Almost all of the technical assistance is directed towards strengthening economic management while in terms of value the loans are dominated the SAPHE (Sanitation, Public Health and Environment) project. Figure 8 shows ADB lending and disbursements to Kiribati for 1966 to 2004.

Table 1

## Cumulative ADB Lending and Technical Assistance, by Sector

Sector	Number		\$ million		Per Cent	
	Loan	TA	Loan	TA	Loan	TA
Agriculture, Natural Resources and Environment		6		1.163		10.2
Education		1		0.150		1.3
Energy	2	1	1.600	0.100	10.6	0.9
Finance	1	3	1.000	0.397	6.6	3.5
Health, Nutrition and Social Protection		1		0.577		5.1
Transport and Communication	2	7	2.300	1.035	15.2	9.1
Industry and Trade		0		0		
Law, Economic Management and Public Policy		13		4.584		40.2
Water Supply, Sanitation and Waste Management	1	3	10.240	1.921	67.6	16.8
Multi Sector		3		1.485		13.0
<b>TOTAL</b>	<b>31</b>	<b>38</b>	<b>15.140</b>	<b>11.412*</b>	<b>100.0</b>	<b>100.0*</b>

\* Differs from sum of sector values, due to rounding.

Source: ADB Database.

<b>Lending</b>	
Cumulative (\$ million)	15.1
2004 (\$ million)	0.0
Active Loans (no.)	1
<b>Contract Awards</b>	
Cumulative (\$ million)	12.1
2004 (\$ million)	-
Ratio (%)	0.0
ADB-wide ratio (%)	17.4
<b>Disbursements</b>	
Cumulative (\$ million)	12.0
2004 (\$ million)	2.5
Ratio (%)	55.5
ADB-wide ratio (%)	17.7
<b>KIRIBATI</b>	
<b>Project Implementation</b>	

Figure 8. ADB lending and disbursements to Kiribati, 1999 to 2004 (\$million). Source: ADB Database

63. In terms of this past assistance, one loan and seven TAs have been related to environmental and natural resources management (Table 2). Over the years ADB's operational strategy in Kiribati has ensured ongoing development assistance related to these two thematic areas.



Table 2

## ADB Assistance Related to Environmental and Natural Resources Management

Assistance	Project Name	Amount (\$)	Date Approved
Loan 1648	Sanitation, Public Health and Waste Mgmt.	10,240,000	December, 1998
TA 2199	Institutional Strengthening – Environment Unit	440,000	November, 1994
TA 2360	Marine Export Development	100,000	July, 1995
TA 2641	Environmental Improvement	72,500	September, 1996
TA 2885	Aerial Photography and Mapping of Tarawa	175,000	September, 1997
TA 4257	Supporting Land Use Management – Kiritimati Is	300,000	December, 2003
TA 0634	Fisheries Development	75,000	October, 1984
TA 2497	Sanitation and Public Health	577,000	December, 1995

64. Lending and non-lending assistance programmed by ADB includes loans as well as project preparatory and advisory capacity-building TAs. The ongoing assistance, and assistance pipeline, comprises: (i) Kiritimati Island Growth Centre; (ii) Water Resources Development, now deferred and renamed as Water Supply and Sanitation; (iii) Land Management Phase 2; and (iv) Implementation of Population Policy. All the above present a strategic opportunity for ADB assistance to address, in a direct manner, some of the key environmental concerns and opportunities identified in the participatory consultations reported above.

### C. Assessment of the Environmental Impacts of ADB's Assistance to Kiribati

65. In Table 3 the TAs and loans related to environmental and natural resource considerations are classified in terms of: (i) their pre-implementation environmental rating; (ii) environmental impacts during implementation; and (iii) the sustained environmental and related impacts post implementation. It is clear that most assistance provided by ADB results in minimal environmental impacts, including during project implementation, and many environmental and related benefits.

### D. Lessons Learned from ADB Assistance

66. The SAPHE project co-financed by ADB has provided a significant number of lessons learned<sup>13</sup>. These include:

- Effective client and community relations must be developed – they are essential components of the overall success and community endorsement of a project. They should include education and awareness programmes under TAs, for community development, participation initiatives and sustainable participation;
- In the brief time since the Public Utilities Board acquired some of the facilities provided under SAPHE, and due to the failure to operate and manage the systems in an appropriate manner, some of the systems have been totally incapacitated. This highlights the need for the organisational structure the Board to be changed. Failure to manage the systems in an appropriate manner will result in their eventual failure;
- Land acquisition and landowner consent are common problems in the majority of Pacific Island Countries. A prerequisite for future projects is to ensure that land acquisition issues are resolved (or minimised) prior to the commencement of works on site. All community consultation processes should involve a technical team which comprises individuals who are fully knowledgeable not only on the technical (engineering) levels of

<sup>13</sup> Government of Kiribati, 2006. Sanitation, Public Health and Environment Improvement Project. Loan 1648 KIR (SF), 82pp.

Table 3

Environmental Performance of Environment and Natural Resources Related ADB Projects Implemented in Kiribati

Project Name	Project Details	Environmental Category <sup>14</sup>	Adverse Environmental Impact	
			Due to Implementation	Sustained, Post Implementation <sup>15</sup>
Fisheries Development	TA 0634	C	C	0
Strengthen Env. Unit	TA 2199	C	C	3
Marine Export Develop.	TA 2360	C	C	0
Sanitation & Public Hlth	TA 2497	C	C	3
Environment Imp.	TA 2641	C	C	3
Photo and Mapping	TA 2885	C	C	2
Land Use Management	TA 4257	C	C	3
SAPHE	Loan 1648	B	B	3

N A = Not assigned

Source: ADB loan documentation and present study.

the project, but also on the environmental and community awareness terms. It is also important to have a member of the community on the team;

- Key stakeholders in a project should be fully aware of the objectives, overall design and effects of a project. During the concept design phase of a TA their input and requirements should be clearly outlined so they are built into the design phase. This will avoid associated problems down the line that will contribute to costly and unwarranted delays;
- There is considerable overlap in the regulatory responsibilities of the various Government departments, especially in the area of water; there have been several instances where the departments could not agree to one common solution when trying to resolve issues over the development of additional water resources. There is need for relevant departments to meet together and harmonize their scope of roles and responsibilities;
- The entity to which a facility is to be handed over should be equally capable to operate and manage the facilities. There should be a proper and sufficient handover interface between the parties designing and installing the facilities and those receiving the facilities at the end of a project. A separate component forming part of the overall project costs should be dedicated to the effective operational and maintenance training of the end operators associated with the facilities. Resources and personnel employed to manage the systems should be equally capable to monitor and manage the systems. On various occasions it was evident that operator incompetence contributed to the damage and failure of some systems;
- Institutions should be able to control transfer or migration of personnel within a Ministry or between Ministries. The inevitable loss of invaluable skilled personnel through such transfers needs to be controlled. For example, personnel trained in environmental monitoring were transferred to other sections of a Ministry, leaving no one to undertake the monitoring activities;

<sup>14</sup> Available in advance only for loan projects; estimated retrospectively for TAs. Category A: Projects judged to have significant adverse environmental impacts (potential or actual); Category B: Projects judged to have some adverse environmental impacts, but of lesser degree and/or significance than those for category A projects; Category C: Projects unlikely to have adverse environmental impacts.

<sup>15</sup> Environmental benefits post project implementation range between zero (Category 0) and substantial (Category 3).

- It is impossible to change the mentality, social habits or living standards of a society overnight. Continuous community outreach and educational programmes are required to enable society to progressively adapt to the required changes. It is therefore prudent to have such programmes in place well before commencement of a project, to ensure that there is a smooth transitional interface. Education and community awareness programmes that include children from kindergarten level through to junior high school level are effective. The continuous involvement of the community also needs to be kept in mind by the Government during the ongoing operations of the facilities; and
- A separate TA dedicated to institutional strengthening at local government level should be considered as part of a project. This would help ensure adequate funding is in place to enable sustainability of such operations as recycling, municipal waste collection and disposal and composting for gardens.

#### IV. PRIORITY AREAS FOR ACTION

67. This section identifies constraints and barriers to improved environmental management outcomes in Kiribati. It also draws on the preceding analysis and review in order to identify broad priorities for action that will reduce these environmental constraints and maximise the development opportunities provided by Kiribati's environment and natural resources. The priorities for action have major implications for national policies and practices, as well as for ADB and Kiribati's other development partners.

##### **A. Removing Constraints and Barriers, and Achieving Environmental and Related Improvements**

68. **Government Commitment.** Two significant barriers to improving environmental quality in Kiribati relate to decisions made by Government. The first is the very small percentage of the national budget allocated to environmental management – the percentage has risen from a low of 0.09% in 2001, but in 2006 it is still only 0.44%. On the other hand, some 37% of overseas development assistance targets environmental and natural resources management. One major consequence is that environmental management is largely project based, allowing little continuity in terms of either activities or staffing. In addition, the overseas development assistance related to the environment is often focused on ensuring compliance with multilateral environmental agreements. Not in all cases are global environmental priorities consistent with national and local priorities. Where inconsistencies occur, national and local priorities can be addressed only if adequate financial resources are provided through the national budget. Given the importance of environmental and natural resources to the continuing economic and social development of Kiribati, there is a strong case to be made for the national budget to allocate increased funding to environmental management. This presupposes that there is capacity to use such funds to good and proven effect. As noted above and below, there is also considerable room for improvement in this regard.

69. The second barrier relates to the Government's own environmental performance. In this regard it is not showing appropriate leadership through consistent use of sound environmental management practices. Exigencies, rather than emergencies, are often given as reasons why some Government-initiated projects should not be subject to the normal development approval procedures, including environmental impact assessments. Government projects are typically large in scale and hence have at least the potential to cause significant environmental impacts. By exempting itself from the environmental regulations, either openly or more subtly, the Government is in turn creating a situation where it is exceedingly difficult to insist on full compliance by other parties. Some of the proposed amendments to the Environment Act are designed to clarify the Government's obligations under the Act and to allow more transparency and accountability with respect to exemptions.

70. **Strategic Planning.** While environmental and related considerations are part of the national strategic planning process, currently their relative importance and scope are both very limited (see Annex 5). Current and planned initiatives to strengthen strategic planning capacities and practices, at both whole of Government and Ministry levels, provide an important opportunity to improve environmental performance, in both the public and private sectors.

71. While there are some notable exceptions, such as establishing the RERF, the public sector in Kiribati does not have a culture of long-term planning or preparing now for events of high detriment that may happen in the future. In general Ministries do not have strong policy research and analysis capabilities. In addition, information sharing among ministries has a low priority.

72. As already noted, policy and management instruments such as the National Development Strategy (NDS) and the Ministry Operational Plans (MOPs) are now encouraging a more inter-sectoral and strategic way of setting objectives and deciding how they are best achieved. The international donor community is also encouraging the Government to plan and act strategically. The next NDS will provide a further opportunity to integrate environmental considerations in the economic and development planning processes.

73. Recently the Government decided to build its capacity for greater whole-of-Government coordination and for strategic policy development and review. One result is establishment of the Strategic National Policy and Risk Assessment Unit in the Office of the Beretitenti. The aim is to enhance the capacity for both whole-of-Government policy development and coordination and national risk management. The concept was agreed to by Cabinet in late 2004 and a technical advisor was appointed in late 2005. The Secretary for the Office of the Beretitenti is acting director of the Unit. Initial staffing is two policy officers.

74. The principal roles of the Unit are to: (i) provide support to the Secretary to Cabinet and the Beretitenti, including advice on Cabinet Memoranda; (ii) review national policies of strategic national importance, especially from the perspective of long-term national risk; (iii) facilitate inter-ministry coordination on specific issues of national importance, as directed by Cabinet; (iv) oversee national disaster management and crisis management arrangements; and (v) oversee Phase II of the Kiribati Adaptation Programme (KAP II).

75. KAP II is the first major project in relation to longer term risk management. It addresses longer term threats to the economy, society and the environment as a consequence of climate change as well as indirect threats arising from increasing population pressure. KAP II is also likely to result in the development of a national water and sanitation strategy from a whole-of-Government perspective, to ensure Kiribati's water security. Other possible areas for review include Kiribati's 'economic security' (e.g. prospects for key industries and sectors such as copra, fishing and energy) and the related questions of outer island development and urban drift. The latter have major economic and social implications.

76. **Effective Legal Mandate.** Recent attempts to address the previously noted shortcomings in the environmental legislation include drafting a new bill to replace the Environment Act 1999. But the proposals for a new act were not approved by Government. Reasons given include the short time the current Act has been in force, the length of the bill, the power given to the Minister under the bill and the apparent failure to reflect the lifestyles of people in the outer islands. As a compromise, a bill to amend the current Environment Act has now been drafted, but it too has yet to receive Government approval for it to be considered by Parliament. The draft Amendment Bill still attempts to address

the shortcomings identified above, except that no new instruments are now proposed. Previously the Government had also indicated its concerns that the proposed new Bill included too many new initiatives.

77. Notably, the draft Amendment Bill:

- Includes additional broader objectives, namely:
  - to provide for the protection, conservation and use of the environment;
  - to promote sustainable development;
  - to control, manage and regulate hazardous substances;
  - to promote the conservation and sustainable use of biological diversity;
  - to protect, conserve and promote heritage; and
  - to give effect to international environmental responsibilities of Kiribati.
- Clarifies that the Act:
  - applies throughout Kiribati, including the EEZ of Kiribati;
  - binds the Republic, since many environmentally significant activities are undertaken by Government and such a provision is necessary to ensure the effective operation of the Act.
- Sets out guiding principles under the Act, including the need for decision makers to give due regard to:
  - the culture and traditions of the people of Kiribati;
  - minimising, where appropriate, any adverse effects upon those persons who engage in a subsistence lifestyle; and
  - considering, where appropriate, the retention and use of the traditional knowledge, innovations and practices of the people of Kiribati relevant to the conservation and sustainable use of the biological diversity of Kiribati;
- Retains the existing provisions for environmental impact assessment, but clarifies the circumstances requiring that such an assessment be undertaken;
- Gives responsibility for most day to day decisions under the new Act to a Principal Environment Officer; but important decisions, such as listing of new protected areas and species, must be made by Cabinet; the Principal Environment Officer is appointed by the Minister and must act under the direction of the Minister; appeals from decisions of the Principal Environment Officer and Environment Inspectors must be submitted to the Minister who can either confirm or modify the decision, based on the advice of Cabinet;
- Combines in an environmental licence the considerations associated with a development consent and a pollution control licence in the existing Act; in that Act both a development consent and a pollution control licence were in many cases required for the same activity, confusing the public and wasting Government resources; the environmental licence will control environmentally significant activities, namely activities which have the potential to cause large amounts of pollution or waste, involve hazardous substances, or cause other environmental problems such as coastal erosion; under the licence such activities will have to be carried on in a way that minimises their environmental impact and prevents complaints from surrounding landowners; environmentally-significant activities must be declared by Cabinet;
- Allows for notices that can be issued where a person is believed to be contravening the Act - they allow steps to be taken to prevent environmental damage without having to navigate a lengthy court process; notices can be appealed to Cabinet;
- Provides a clear obligation relating to litter, emissions from vehicles, pollution of water, dumping of waste, protection for coral reefs, mangroves and sea grass beds, species that are in danger of extinction or are culturally significant, areas to protect sites of cultural or historic significance as well as plants and other organisms, and to raising pigs – these are major public concerns and are not provided for adequately in the present Act;
- Allows a magistrate to hear any proceedings under the Act - under the existing Act all prosecutions were required to be brought in the High Court, wasting court resources;

- Establishes a civil wrong – there are often considerable uncertainties associated with environmental impacts, making it difficult to prosecute criminal offences as these need to be proved beyond reasonable doubt; to date this has proven to be a significant obstacle for effective prosecution; by making contraventions of the Act civil wrongs in addition to offences, it allows proceedings to be brought which only require proof on the balance of probabilities; and
- Expands regulation making powers on all aspects related to the objects of the Act – the regulation making powers in the existing Act are very limited and cannot be used to good effect.

78. **Adequate Capacity.** While Kiribati has a well formulated economic and development planning process (see Annex 5), there is a lack of institutional capacity at both national and sectoral levels to give practical effect to the policies and procedures. This is the case across all key areas, including policy making, planning, implementation and monitoring. Thus while much effort goes into preparing the NDS and MOPs, both their impact on the day to day activities of Government and the delivery of benefits to the people and other stakeholders leave much to be desired. One of the reasons is a lack of ownership of these strategies and plans. This leads to poor commitment at the operational level, poor implementation and weak reporting in relation to the objectives and targets detailed in the MOPs. In turn, this last point means that the progress in achieving effective performance-based budgeting is impeded. Sometimes financial and other required resources are not made available in a timely manner, if at all.

79. A lack of continuity is also a major constraint. This relates especially to a high staff turnover, but also to disruptions related to changes in government. There is a need to increase continuity, consistency, and integrity in the development policies and plans throughout successive planning periods. Institutional capacities need to be strengthened at all levels. This can be achieved through such initiatives as staff training, skills transfer and ensuring that the resources required to implement approved policies and plans are made available in a timely manner.

80. Considerable improvements in economic and development planning could be achieved by increasing and maintaining the full participation of all line ministries and other stakeholders in the preparation and implementation of the NDS and the MOPs, as well as promoting the acceptance and understanding of these key documents and the economic and development planning process, including the linkage with the national budget.

81. Specific practical initiatives that would help achieve the improvements mentioned above include: (i) improving ownership and commitment by increasing staff Incentives such as improved pay and training opportunities; (ii) providing training on procedures such as preparation of the NDS and MOPs, MOPs progress reporting and preparation of project proposals; (iii) streamlining the economic and development planning processes, including project-related procedures; and (iv) establishing a national committee with oversight of the preparation, submission, monitoring and evaluation of the MOP progress reports from line ministries and with responsibility for the preparation and implementation of the NDS.

82. In summary, although some development policies and plans have suffered from fragmentation, lack of integrity, and other constraints, overall they provide information that is critical to the success of the economic and development planning process. Required improvements include ensuring that future development policies and plans are more consistent, both individually and collectively. They should also be integrated with regional and international development commitments, including those related to climate change and other environment-related issues. The policies and plans should also be supported by capable institutions that are provided with adequate resources. The institutions need to work in a coordinated and cooperative manner and provide a strong enabling environment

for the planning processes, This includes the use of procedures that allow effective planning, implementation and monitoring, ultimately resulting in achievement of the desired development outcomes.

83. **Engagement with and by Civil Society.** There is urgent need for increased understanding of both the opportunities the environment and natural resources provide for Kiribati, as well as the environmental consequences of all activities, from major development projects to the daily activities of families and individuals. Such understanding will help ensure that people have the knowledge, skills and technologies that will allow them to use the environment and natural resources in a sustainable manner. Specifically in terms of civil society, enforcement of strengthened environmental legislation should still be pursued where appropriate. However, more effort should be placed on encouraging voluntary compliance with that legislation, including the regulations. This requires legislation that is not only clear, enforceable and well understood, but also that it is applied in a consistent and equitable manner. At present none of these requirements is close to being met. There is also a tendency to invoke the punitive powers available under the current Environment Act, often in a somewhat confrontational manner, rather than use more conciliatory methods to achieve the same outcomes.

84. As a result, it is desirable to give more emphasis to education and awareness programmes that not only explain why specific activities are detrimental to the environment and natural resources, but also promote alternative, more environmentally sound ways in which people can meet their development and related objectives. This means giving less emphasis to the use of punitive measures to stop the environmentally damaging actions of individuals, families and communities.

85. While a small number of comparatively small-sized and chronically under-resourced NGOs are endeavouring to increase the sustainability and quality of life of families and communities in Kiribati, their influence is minor in comparison to the situation in most other Pacific Island Countries. It is argued that the absence of large and influential NGOs reflects a common belief that Government looks after the interests of people and will provide for their needs. While this may well be true, the experience in many other countries in the region is that the Government is not the most effective and efficient partner in community development projects or service provider. Increasingly in those countries NGOs with typically narrow advocacy roles are being transformed or replaced by NGOs and community-based organizations which perform these roles, often for and on behalf of Government.

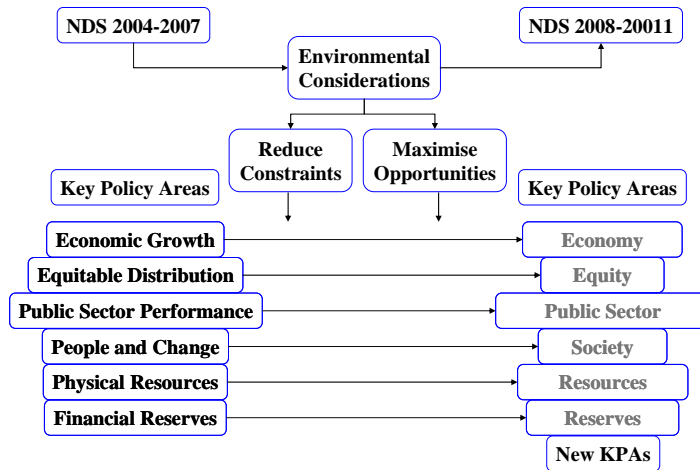
86. The same transition is occurring in Kiribati, albeit somewhat belatedly and on a very small scale to date. Government, the small private sector and the people at large should be encouraged to welcome and encourage these wider roles and responsibilities for NGOs and community-based organisations.

## **B. Priority Areas for Action**

### **1. Increase Emphasis on Environmental Considerations in Strategic Planning**

87. As has been shown above, the state of the environment has a major influence on both the economic and social well-being of Kiribati and its people. So too does the ease with which natural resources can be accessed and utilized. The preceding analysis has also highlighted many opportunities to reduce environmental constraints on development and to increase the beneficial use of the environment and natural resources. An important enabling step would be to ensure that the key policy areas in the *NDS 2008-2011* include specific strategies and actions to reduce these constraints and maximise the opportunities (Figure 9).

a)



b)

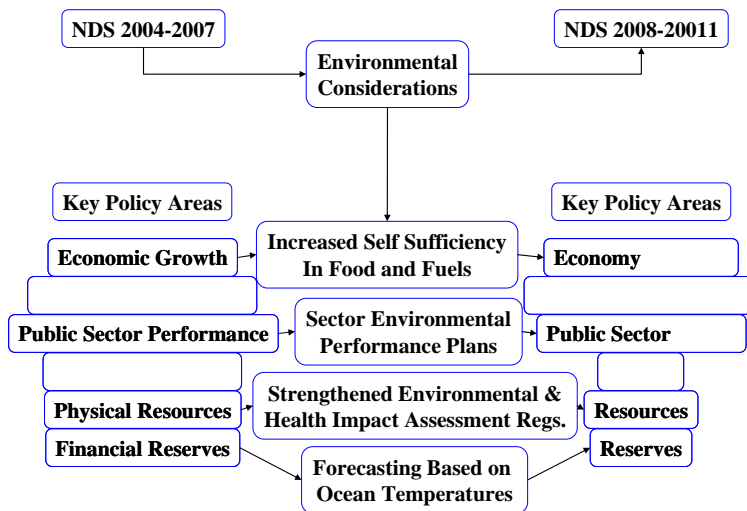


Figure 9. a) - the conceptual process by which environmental considerations can be integrated into each of the key policy areas of the National Development Strategies; b) - selected practical examples.

88. Another important step would be to rationalize and streamline the economic and development planning processes, including project related procedures. All key areas need to be addressed, including policy making, planning, project preparation, implementation and monitoring. While the planning processes are being strengthened is also an ideal time to also make revisions to ensure that environmental considerations are given greater emphasis.

89. Improvements will be more rapid if a national committee is established and given responsibility for ensuring a comprehensive, coordinated and integrated approach to economic and development planning, including preparation and implementation of the NDS and oversight of the preparation, submission, monitoring and evaluation of the MOP progress reports from line ministries. This will help ensure that Government institutions interact in a coordinated and cooperative manner, leading to a strengthened enabling environment for the planning processes as well as for their implementation.

90. Overall the above initiatives will strengthen project planning and programming policies and procedures, resulting in a more integrated, coordinated and sustainable approach to development.



## **2. Enhance the Environmental Management Capacity of Key Development Ministries**

91. Successful integration of environmental considerations requires that relevant individuals in all Government institutions have the understanding and skills to ensure that ministry, public enterprise and cross-sectoral policies and plans include strategies and actions to minimize adverse environmental impacts and maximize the appropriate use of the environment and natural resources in ways that add further value to intended outcomes. It is also important that in each institution there are individuals with the ability to establish environmental performance targets and identify, monitor and evaluate appropriate performance indicators. Finally, all relevant Government institutions need to be able to access the expertise required to undertake the environmental assessments required as part of project planning and programming.

92. Integrating environmental considerations should thus be part of the wider effort to build institutional capacity at both national and sectoral levels in order to give practical effect to the policies and plans. Ownership of the various strategies and plans should be encouraged in order to improve commitment, implementation and reporting at operational levels. Similarly continuity, consistency, and integrity of the development policies and plans through successive planning periods should be increased. Staff training, skills transfer and timely availability of the resources are practical ways to achieve these outcomes. It is also important to ensure the full participation of all line ministries and other stakeholders in the preparation and implementation of the NDS, the MOPs and the business plans of public enterprises.

93. At an operational level, selected staff in development ministries, such as the Ministry of Public Works and Energy, should be given the additional training that will ensure they have the knowledge and skills required to assess the environmental impacts of development projects being proposed by their ministry. Similarly, training should be provided to staff so they can prepare and implement environmental management plans for significant projects. In this way the responsibility for ensuring that development projects are environmentally sound is shifted to those ministries that are proposing, planning and implementing the projects. As noted in the following section, it will be important for MELAD to retain oversight of this process, to ensure that Government policies and plans, including its environmental targets, are achieved.

94. Specific activities might include: working with relevant stakeholders to undertake capacity and needs assessments and prepare a capacity enhancement plan; identifying the development ministries, and staff in those ministries, who will participate in the capacity enhancement activities; undertaking the required training and wider institutional strengthening; and preparing and implementing a monitoring and review plan.

## **3. Strengthen Capacity for Environmental Review, Monitoring and Performance Audits**

95. An important aspect of a move to greater self regulation and internal responsibility for environmental management in development ministries is the implications for the roles and responsibilities of the Environment and Conservation Division of MELAD, including those of its staff. Institutional strengthening will be required so the Division can review and encourage improvements in the environmental management practices of other sectors. Staff will require further advanced training in relation to reviewing environmental impact assessment reports as well as further training and equipment for environmental monitoring, compliance inspections and awareness raising.

96. Such a move also increases the need for the Division to have an effective legal mandate, including the ability to review, monitor and audit the environmental performance

of the development ministries and their agents. This report has highlighted the shortcomings in the existing legislation and described the attempts to address them. In the absence of the required improvements to the environmental legislation, any move towards greater self regulation and internal responsibility could result in still further environmental degradation. Thus devolution of day to day responsibilities for environmental management to development ministries must go hand in hand with improvements in the effectiveness of the environmental legislation.

97. Capacity building within the Division could form part of a broader effort to strengthen the ability of MELAD to address other growing challenges such as sustainable land management and increased production in the agricultural sector. For example, the following needs have been identified<sup>16</sup>: an integrated land and infrastructure development programme for priority areas, including institutional strengthening, preparing a detailed plan of the land development fronts as well as proposed townships, and incorporating infrastructure development (particularly roads, water and sanitation, and electricity) in the plans; implementation of land development plans at proposed development sites, including field marking of plots, land release programmes supported by a range of land administration systems, land registration, and an improved land information system; and strengthening the legal basis for land development programmes including updating of the State Land Act, 2001, preparation of a Strategic Plan to formally allow alienation of State lands on Kiritimati Island and reviewing and updating the State Lands Act and Land Planning Ordinance, where appropriate.

#### **4. Increase Voluntary Compliance with Environmental Regulations**

98. Currently in Kiribati there is a reasonably widespread view that there is too much reliance on improving environmental outcomes through enforcement of the environmental legislation. Concerns expressed generally relate to: (i) a lack of consistency in how the legislation is applied; (ii) the high financial and other costs of compliance; (iii) the lack of a legal mandate; (iv) the frequent failure of the enforcement procedures to result in environmental improvements; and (v) the confrontational situation that often arises.

99. There is a need to consider compliance and enforcement within the wider socio-economic and political contexts such as land ownership, leaseholds, squatting and income generation. For example, pressure on land in South Tarawa as a result of the growing population has made compliance with environmental legislation especially difficult, in part because of uncertainties over land ownership and occupancy rights. Such difficulties are compounded when enforcement of the legislation is made into a political issue, at local or national Government levels.

100. While enforcement should still be pursued where appropriate and necessary, much can be gained by encouraging more cooperative and harmonious approaches that encourage voluntary compliance. This may be particularly appropriate at the level of the individual, family and community. The more common methods to increase voluntary compliance are education and awareness raising, but many other options exist, including policy initiatives, incentives, competitions and administrative actions. The Environment and Conservation Division of MELAD has employed such methods, as have non-governmental and community based organisations, all with good effect. This provides a good foundation for further targeted efforts.

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<sup>16</sup> ADB, 2006: Technical Assistance Report, Project Number 39641, Kiribati: Integrated Land and Population Development Program in Kiritimati Island.

101. An essential first step to increasing voluntary compliance is to identify ways in which individuals, families and communities can maintain their customary practices, many of which provide the sole source of income. Subsequently education, awareness raising and other programmes should focus on: (i) why prohibited activities are detrimental and some other activities are undesirable; (ii) the fact that the legislation can be enforced, and will be where necessary, in a consistent and transparent manner; (iii) enforcement typically results in a lose-lose-lose situation – for the Government because limited resources are diverted from more productive uses; for the violator because it costs them time, money and loss of reputation; and for the environment because detrimental actions have taken place rather than being avoided; (iv) the more environmentally sound ways by which people can meet their needs, most of which go well beyond achieving compliance with the relevant legislation; and (v) the assistance and support that is available to ensure that improvements are socially just and equitable.

102. Governmental institutions and non-governmental and community-based organisations need to be strengthened in order to place greater emphasis on the preparation and delivery of programmes that encourage sound environmental practices, and hence achieve more than mere compliance with the environmental legislation. This includes not only staff training in areas related to enhancing knowledge and the transfer of relevant skills, but also in areas related to monitoring and evaluating the effectiveness of the programmes designed to improve environmental sustainability.

103. Women, children and youth can be particularly effective at encouraging moves towards environmentally sound lifestyles. As a result, agencies that can organize and mobilize such environmental advocates should be supported and encouraged to engage in developing and delivering programmes that educate, motivate and empower individuals, families and communities to adopt more environmentally friendly behaviours and to use natural resources in a sustainable manner.

## **5. Maximise Economic and Social Benefits from Sustainable Use of the Environment and Natural Resources**

104. This report has identified the many economic and social benefits for Kiribati and its people if greater, but sustainable use is made of the country's environment and natural resources. Opportunities that have been highlighted include improved management and utilization of the inshore and offshore fisheries, seaweed cultivation and export, copra production, nature-based tourism and improved environmental health.

105. At present many of the activities that rely on the environment and natural resources are unsustainable and are depleting resources or are degrading the environment. This is especially the case in South Tarawa. Another issue is the large interannual variability in the natural resource base – examples are fisheries, copra and seaweed. These variations create cash flow issues at national level, and have significant shorter-term economic and social consequences at individual, family and community levels.

106. A whole-of-Government approach is required to resolve the current issues and ensure sustainable use of the environment and natural resources, along with a flow of economic and social benefits to Kiribati and its people. For example, maximizing the opportunities provided by the near pristine state of the diverse and abundant fauna and flora of the Phoenix Islands provides an excellent example of both the challenges and the opportunities (Figure 10).

107. Kiribati has signed agreements with fishing nations stating that fishing vessels will be allowed to fish in Kiribati's EEZ. The recently created PIPA is currently not recognized in these agreements. If the proposed Environment Bill is passed in its present form these

fishing vessels would be required to hold an environment licence before fishing in the PIPA. Issuing an environment licence to allow fishing in the PIPA would be contrary to the intent of a protected area.

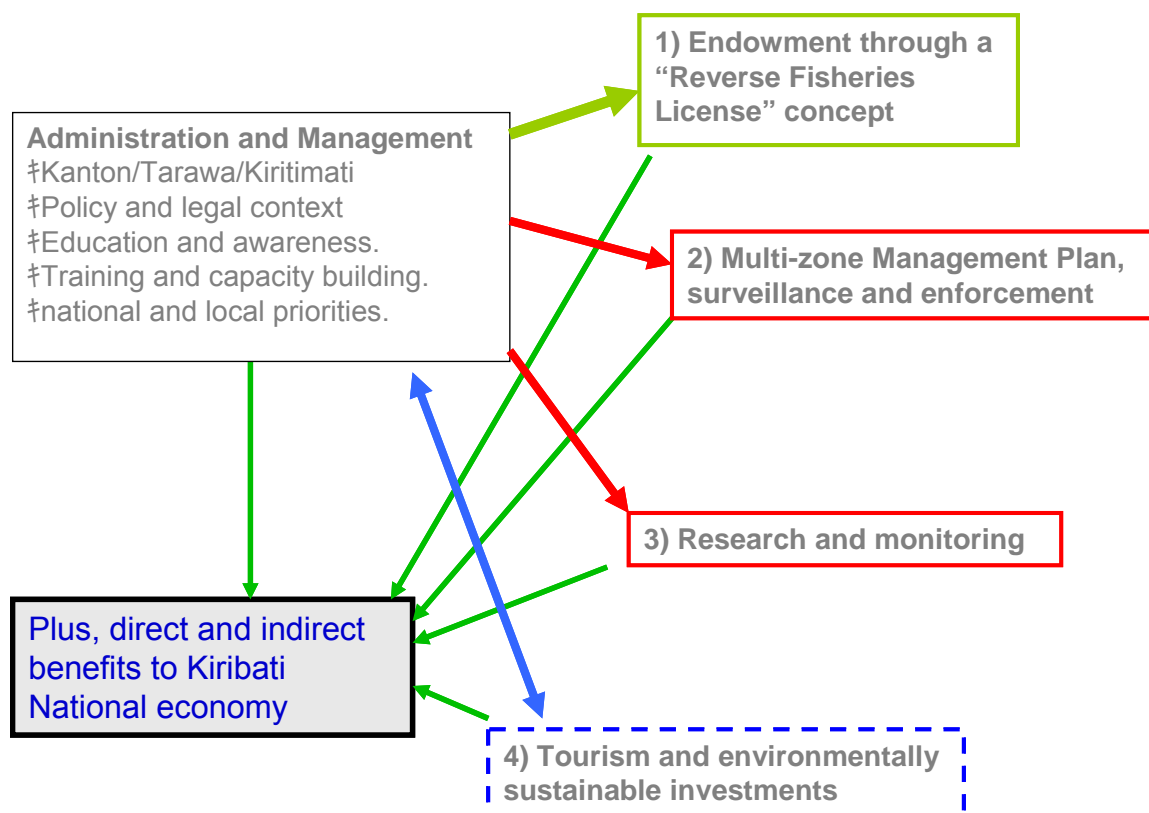


Figure 10. Strategies for developing the Phoenix Islands Protected Area (PIPA) (Source: MELAD).

108. There are a number of options for addressing the fishing license problem: (i) reduce the protected area declared under the Environment Bill to 12nm around each of the Phoenix Islands; this would avoid conflict with fishing licenses that have already been issued. Once these licences expire, and all new licences in effect exclude the PIPA, extension of the protected area out to 60nm could be declared by a decision of Cabinet; (ii) declare the full 60nm as a protected area but include provisions in the Environment Bill to allow fishing in the protected area by those vessels covered by the current licences that allow access to the entire EEZ of Kiribati; this would allow fishing in the protected area under existing fishing licences; fishing licences issued once the Environment Bill has been passed would have to comply with the strengthened Environment Act; (iii) protect the full 60nm, without any conditions; this reflects most accurately the Cabinet decisions and public announcements that have been made to date; but this may cause conflict with existing fishing licences.

109. As it currently stands, the Environment Bill protects out to 60nm and does not include any conditions. Over and above these legal issues, if fishing is prevented in the PIPA it is likely that there will be a reduction in the fishing revenue from fishing licenses. However, some international organizations have indicated that they might compensate Kiribati for lost fishing revenue. As yet there is no agreement on the nature and extent of this compensation.

110. If Kiribati is to in fact to gain from establishing the PIPA this is likely to be through major investments in nature-based tourism, likely based on public-private partnerships. Moreover, if the strategies currently used to develop tourism in Kiritimati Island are

replicated, this will include a catch and release fisheries for tourists holding an appropriate licence. Again care will be needed to ensure that issuing such licences is also consistent with the intent of the protected area designation. This may become more problematic if Kiribati is receiving compensation for prohibiting fishing in the area.

111. As a semi-subsistence nation, Kiribati can ensure continuing economic and social benefits by enhancing food security through increased local production. This in turn will have the desired outcomes of increasing family income generation and improving the health of the public at large. Several community-based initiatives to develop and enhance family and village gardens are already demonstrating the multiple benefits of increases in local food production.

112. As noted previously, increased production and use of coconut oil presents an opportunity to enhance energy independency and security, as well improve outer island income generation. This would be especially so if small-scale units, such as that shown in Figure 11, were deployed in the outer islands. The unit itself runs on coconut oil. It can process up to one tonne of copra a day, yielding 600 litres of coconut oil.

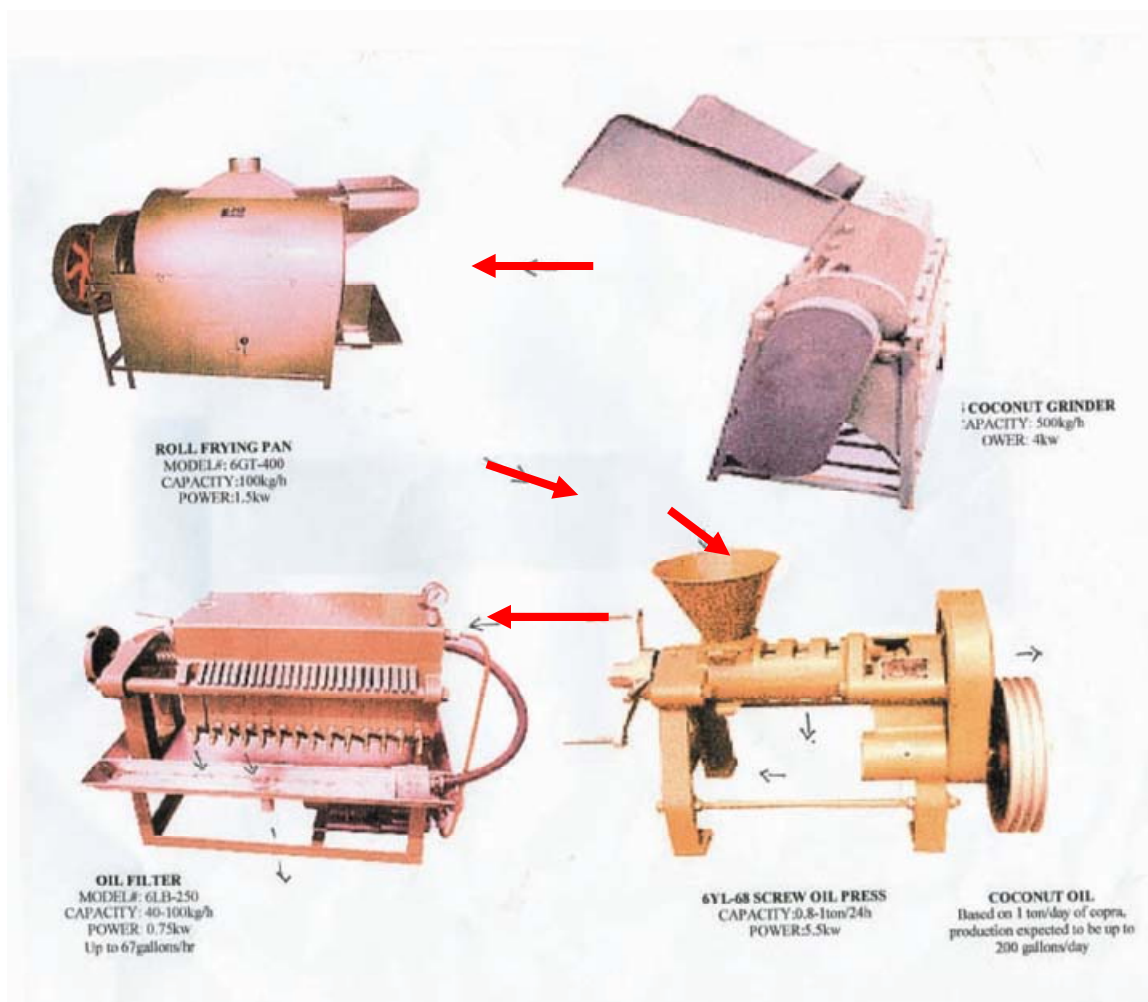


Figure 11. Example of a small-scale copra mill, suitable for use in the outer islands of Kiribati.

113. Estimates suggest that each year some 45,000 m<sup>3</sup> of sand and aggregate are being removed from the beaches and other land areas of Tarawa. A study of community involvement in sand mining is currently being undertaken by the Ministry of Fisheries and Marine Resources Development. Of the 109 households surveyed, 35 were involved in

sand mining (see Box 5, Annex 7). The 35 households mined over 33,600 bags of sand per year, representing 96 bags per household per year. Assuming the sample is representative, over 1700 homes in South Tarawa mine sand. They will mine over 160,000 bags of sand per year.

114. Only one household reported selling sand. This suggests a high under-reporting of local sand sales, likely because sand mining is illegal without a permit. For this one household the 20 bags per week, at \$1 per bag, represents an income of at least \$1000 per year.

115. Planning is well advanced to dredge aggregate on a sustainable basis from a lagoon site. While such an initiative is highly desirable from the point of view of reducing coastal erosion and related problems, the above figures highlight the need to avoid the adverse economic and social consequences for individuals and families arising from a change to centralized extraction of sand and construction aggregates.

### **C. Road Map for Environmental Management**

116. To facilitate the integration of environmental considerations in national development planning it is useful to present the five thematic priorities for action in the form of a road map for environmental management. Best practice in preparing an environmental road map involves the following sequential steps: (i) identify critical environmental concerns, needs and problem areas; (ii) determine the current state of relevant environmental components and systems; (iii) specify a timeframe within which improvements in environmental performance and quality are to be achieved (typically by between five and twenty years); (iv) develop goals and targets for environmental performance and quality, consistent with national policies, strategic plans and objectives; (v) identify actions and activities that are required to meet the specified targets; (vi) identify the implementers; (vii) identify and implement a system to achieve changes in environmental performance and quality; (vi) review progress at pre-determined intervals; and (vii) feed back information from the review process into the implementation process. To the extent practicable, actions and strategies to promote improvements should be innovative, test new theories and alternative technologies, and promote breakthroughs for solving difficult problems.

117. Much of the information relevant to the first stages of preparing an environmental road map has been presented in preceding sections of this report. The remaining sections of the road map focus on the outcomes, indicators, targets and actions that will improve environmental performance and quality, consistent with economic and development policies, plans and operational objectives.

118. There are three important comments to make about the environmental management road map: (i) to date Kiribati has not developed a national system of management targets and performance indicators – this is in fact a priority need that should be met as soon as possible; in the interim indicators, such as those discussed previously, have been used where possible and appropriate; (ii) while consultation, training, education and awareness raising have been identified as areas requiring substantial attention if improvements in environmental performance and outcomes are to be achieved, these activities have not always been given separate attention in the issues, constraints and actions section of the road map. Rather, their place in the road map is implicit – strengthening consultation, training education and awareness raising should be infused into the work plans of the projects that are identified in the road map; and (iii) consistent with ADB's practice of mainstreaming climate change in national development planning and processes<sup>17</sup>, climate variability and change have not been given separate attention.

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<sup>17</sup> ADB, 2005: Guidelines for Adaptation Mainstreaming in Pacific Department Operations.

Rather, addressing climate-related risks to the sustainability of projects and other development initiatives should form an integral part of the objectives and work plans of the projects that are identified in the road map.

119. In total, six project interventions are proposed. Some interventions relate to strengthening the assistance currently being provided or in the pipeline, namely:

- Kiritimati Island Growth Centre;
- Water Supply and Sanitation;
- Land Management Phase 2; and
- Implementation of Population Policy.

120. As elaborated in Table 4, this planned assistance presents a strategic opportunity for ADB assistance to address, in a direct manner, many of the key environmental concerns identified in the participatory consultations and expressed as the priority areas for action.

121. Because the above assistance is unable to deliver substantial improvements in the five priority areas for action, it is further proposed that six new projects be considered by the Government of Kiribati. It is unrealistic to expect that all the projects could be implemented in the immediate future. Likewise, it is not realistic to suggest that ADB could provide all the necessary technical and other assistance. Collaboration, cooperation and coordination with the Government, and amongst development partners, will be required if substantial progress is to be made in implementing the proposed projects in a timely manner.

122. The proposed projects are:

- Incorporating environmental considerations in NDS 2008-2011;
- Enhancing capacities of development ministries to reduce environmental constraints;
- Strengthening environmental monitoring and performance audits;
- Increasing voluntary compliance;
- Maximising benefits from sustainable use of the environment; and
- Increasing use of local resources.

123. Concepts for the proposed assistance are provided in Annex 8. The following sections describe how the six proposed projects address the priority areas that have been identified.

124. The roadmap is presented in Table 5.

Table 4

## Opportunities for Current or Planned Assistance to Address the Priority Areas for Action

Priority Areas for Action	Current or Planned Assistance			
	Kiritimati Is Growth Centre	Water Supply and Sanitation	Land Management Phase 2	Implementation of Population Policy
<b>Increased Emphasis on Environmental Considerations in Strategic Planning</b>	Use project as model for other growth centres and for national strategic planning	Safeguarding the environment will be a requirement when developing water supply and sanitation systems in the regional growth centres	Use project as model for other growth centres and for national strategic planning	Project goal, to slow population growth, is in part driven the environmental implications of increasing population numbers
<b>Enhance Environmental Management Capacity of Key Development Ministries</b>	Use project as an opportunity for staff in key development ministries (e.g. Finance, Public Works, Health) to learn best practices in environmental management	Involve staff from key development ministries, to ensure they become familiar with best environmental management practices	Use project as an opportunity for staff in key development ministries to learn best practices in environmental management	Training for the Population and Development Coordination Committee and the Population Development Unit should include basic principles and practices in environmental management
<b>Strengthen Capacity for Environmental Review, Monitoring and Performance Audits</b>	Use project as an opportunity for staff in Environment Division to enhance their abilities in environmental reviewing etc.	Use the review, monitoring and auditing processes in the project to strengthen capacity of Environment Division	Use the review, monitoring and auditing processes in the project to strengthen capacity of Environment Division	Staff of the Environment Division will benefit from improved understanding of the links between population growth and environmental quality
<b>Increase Voluntary Compliance with Environmental Regulations</b>	Use project as demonstration of increasing environmental compliance by individuals, families and communities	Include education component, to ensure that individuals use and maintain facilities in an appropriate manner	Include education component, to ensure that individuals use and maintain facilities in an appropriate manner	Education initiatives should stress the links between population growth and environmental quality
<b>Maximise Economic and Social Benefits from Sustainable Use of the Environment and Natural Resources</b>	Ensure project is used as model showing how sustainable use of the environment and natural resources can deliver major economic and social benefits	Identify and take advantage of opportunities resulting from improved water supplies and sanitation; consider using by-products from the waste water treatment plant as fertiliser and for other productive uses	Land development plans encourage sustainable use of the environment and local resources, to secure economic and social benefits	Education initiatives should stress the opportunities for, and benefits of, sustainable use of the environment and local resources



Table 5

## Environmental Management Road Map

Proposed Outcomes and Indicators	Targets					
	Current (est.)	Year 5	Year 10	Year 15	Year 20	Year 25
<b>Environmental Considerations Incorporated in Strategic Planning</b>						
Key policy areas address environmental constraints & opportunities [% of policies]	0	80	100	100	100	100
Policies with quantitative targets and indicators - incl. environmental [% of policies]	0	60	100	100	100	100
Best practices in economic and development planning process [% achieved]	0	30	60	90	100	100
<b>Enhanced Environmental Management Capacity of Key Development Ministries</b>						
Development ministries with institutional capacity to manage env. considerations [number]	0	5	6	6	6	6
Relevant staff trained and competent in environmental management [%]	<10	25	75	100	100	100
<b>Strengthened Capacity for Environmental Review, Monitoring and Performance Audits</b>						
Relevant staff trained and fully competent in environmental review etc. [%]	<10	75	100	100	100	100
Projects approved using best practice in EIA [%]	70	100	100	100	100	100
Environmental conditions for approved projects monitored and enforced by regulator [%]	<10	60	90	100	100	100
Environmental violations successfully prosecuted [%]	<0	70	100	100	100	100
<b>Increased Voluntary Compliance with Environmental Regulations</b>						
Portion of population aware of, and complying with, environmental regulations [%]	10	60	90	100	100	100
<b>Increased Economic and Social Benefits from Sustainable Use of the Environment and Natural Resources</b>						
Quantities of environmentally damaging chemicals imported (% relative to present)	100	50	35	25	15	5
Number of visitor arrivals for holiday [% relative to present]	100	130	160	200	225	250
Portion of households self sufficient in vegetables [%]	10	20	40	60	70	80
Food imports, relative to present [%]	100	85	75	65	60	55
Portion of energy requirements from indigenous sources [%]	99	90	80	75	70	60
Portion of sand and construction aggregate mined sustainably [%]	0	50	100	100	100	100
<b>Initial Actions</b>						
	<b>2007</b>	<b>- 2010</b>	<b>- 2015</b>	<b>- 2020</b>	<b>- 2025</b>	<b>- 2030</b>
<b>Environmental Considerations Incorporated in Strategic Planning</b>						
▪ Incorporating environmental considerations in NDS 2008-2011	■					
<b>Enhanced Environmental Management Capacity of Key Development Ministries</b>						
▪ Enhancing capacities of development Ministries to reduce environmental constraints	■					
<b>Strengthen Capacity for Environmental Review, Monitoring and Performance Audits</b>						

▪ Strengthening environmental monitoring and performance audits						
<b>Increased Voluntary Compliance with Environmental Regulations</b>						
▪ Increasing voluntary compliance						
<b>Increased Economic and Social Benefits from Sustainable Use of the Environment and Natural Resources</b>						
▪ Maximising benefits from sustainable use of the environment						
▪ Maximizing benefits from increased use of local resources						

## **D. Implications for ADB's Intervention Programmes**

125. Table 6 presents the results of a systematic analysis of the strengths, weaknesses, opportunities and threats (SWOT) in relation to addressing the five priority areas for action through a more explicit consideration of environmental opportunities and constraints in ADB's assistance to Kiribati. It is clear that assistance from ADB could make valuable contributions in all priority areas, but only if Government and other stakeholders take ownership and show full commitment to successful implementation of the proposed activities.

### **1. Mainstreaming Environment in Planned ADB Assistance**

126. Table 4 has illustrated how, through mainstreaming environmental considerations into development planning and processes, activities related to the five priority areas for action can be integrated into projects currently in the pipeline for ADB assistance to Kiribati.

### **2. Proposed New ADB Interventions, with Environment Considerations an Integral Component**

108. As noted above, concepts for the proposed new projects are presented in Annex 8. These additional assistance projects are proposed because, practically, there are only limited opportunities to realign and strengthen the programmed assistance in ways that would address the identified needs in the five priority areas for action. Table 7 illustrates how the proposed assistance will assist in mainstreaming environmental considerations into economic and development planning processes in relation to the five priority areas for action.

109. A national consensus on the contributions the environment and natural resources could make to national and community development, as might be expressed in the NDS 2008-2011, would provide a framework for the other projects that are required if the priority areas are to be addressed in an adequate manner. Many of the proposed projects build on and add value to assistance already provided by ADB. Table 7 also highlights the many linkages between the six proposed assistance projects and, in turn, between these and the assistance that is already programmed (Table 4).

## **E. Implications for the Government, Communities and People of Kiribati**

110. There is an urgent need to integrate environmental and natural resource management considerations into Kiribati's economic and development planning processes. This is for three principal reasons: (i) such a move would provide a significant opportunity to improve on current management regimes – most of the few available indicators suggest that environmental quality is declining and natural resources are being consumed at unsustainable rates; (ii) the future of Kiribati rests on its people, its environment and on its natural resources – if agriculture, tourism and fisheries are to play increasing roles in the national economy, and in community well-being, there will be growing pressures on these assets and thus a concomitant need to manage them to ensure their sustainability; and (iii) the current and projected high population growth rates have numerous implications for the environment and natural resources if management practices are not improved dramatically.

111. Important population and economic planning decisions will have to be made. Moreover, environmental and resource management decisions made today will establish the quality of life of people tomorrow and, more importantly, in decades to come. People are already suffering the consequences of previous mismanagement of the environment and natural resources. Moreover, many people now prefer to buy food rather than produce it, usually with a preference for imported processed convenience foods rather than more

**Table 6**

**SWOT Analysis of Integrating Environmental Considerations in Proposed ADB Assistance to Kiribati**

<b>Priority Area</b>	<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
<b>Environmental Considerations Incorporated in Strategic Planning</b>	Widespread stakeholder support, with unanimous agreement that the current NDS should have done more to address environmental considerations in each of the key policy areas; consistent with ADB's Pacific Strategy for the New Millennium and especially with the Pacific Region Environmental Strategy.	Not part of current ADB strategy for Kiribati but would strengthen the policy framework for ADB's strategic priorities for Kiribati.	Reaching a whole of Government and whole of country policy consensus on how the environment can support development will do much to ensure that all national policies, sector plans and development projects will pay due regard to environmental considerations	Currently there is a lack of capacity to address this priority area. Ministries are struggling to develop and implement policies that relate directly to their mandates; additional demands are seen as diverting attention and resources from the key tasks; however, there is a growing commitment to addressing environmental considerations
<b>Enhanced Environmental Management Capacity of Key Development Ministries</b>	Building such capacity would go a long way towards ensuring that initiatives in the key policy areas are undertaken with due consideration for their environmental consequences; it would also do much to improve environmental quality in Kiribati.	At present there is a widespread view that environmental management is the responsibility of the Environment Division; it will take considerable effort to overcome this barrier; but if the efforts are successful, the environmental outcomes will be substantial.	Given the growing realisation that the status quo in environmental management is unsustainable, and that there is an urgent need to improve environmental management, this initiative is timely and likely to be successful if managed wisely.	Mindsets need to be changed in all Ministries; this is not a trivial task. Institutional strengthening and enhancing the knowledge and skills of relevant staff will need to be undertaken; this is a lengthy and resource intensive task.
<b>Strengthen Capacity for Environmental Review, Monitoring and Performance Audits</b>	Legislation provides the mandate for such activities, but there are significant shortfalls in the required capacity; unless these activities are undertaken compliance with the legislation and associated regulations is likely to be very low.	At present the focus is on undertaking effective environmental impact assessments; the need for equal emphasis on these other important aspects of environmental management is not apparent to all decision makers and hence resources are not being made available to strengthen capacity in these priority areas.	As more staff undergo advanced training in environmental management they will become increasingly aware of the environmental benefits that come from undertaking reviews, monitoring and audits.	Much of the funding for the Environment Division comes from international sources and is project based. Until there is a major change in this situation, managing the environment based on longer term perspectives will remain under-resourced.
<b>Increased Voluntary Compliance with</b>	Currently compliance by individuals and families is largely	Initiatives that are aimed at improving voluntary compliance	NGOs and community-based organisations are placing	Unless individuals and communities are provided with

Priority Area	Strengths	Weaknesses	Opportunities	Threats
<b>Environmental Regulations</b>	overlooked, in part due to difficulties with enforcement. Given the subsistence nature of the economy, individuals and families have an important influence on environmental quality. Increased compliance, gained on a voluntary basis, is likely to have ongoing benefits.	are resource intensive and may not yield benefits in the short term. Not all individuals will be willing to comply on a voluntary basis. Hence there is still a need to ensure that appropriate regulations are in place and can, and will, be enforced.	increasing emphasis on awareness raising and education, to change attitudes and behaviours. Government should work with such organisations to ensure that efforts are complementary and adequately resourced, on an ongoing basis.	alternatives, in many cases they have to choose between their well-being and compliance. This is the current case for sand mining, for example. Thus a key to the success of this initiative is providing sustainable alternatives so that non-compliance is not the only option.
<b>Increased Economic and Social Benefits from Sustainable Use of the Environment and Natural Resources</b>	Consistent with ADB's operational strategy and strategic priorities for Kiribati and with the NDS; also consistent with ADB's Pacific Strategy for the New Millennium and with the Pacific Region Environmental Strategy; the outer island development initiatives and the Kiribati Population and Development Strategy.	Currently large demands are being placed on the environment and natural resources, especially in South Tarawa; the challenge is to ensure that these demands are met on a sustainable basis; in general this means that new opportunities must be identified; examples include the outer island development initiatives and the Kiribati Population and Development Strategy.	The NGO community in Kiribati has demonstrated successful approaches to increasing social and economic benefits from sustainable use of the environment and natural resources. The Government can assist by further strengthening of the enabling environment for such initiatives.	The challenge is to ensure the long term sustainability of development initiatives that rely on natural resources or depend on environmental assets; this will require significant attitudinal and behavioural changes. With the current focus on short term well being, such changes may be difficult to achieve.

**Table 7**

**Contribution of the Proposed Assistance to Addressing the CEA Priority Action Areas**

<b>Proposed Assistance</b>	<b>CEA Priority Action Areas for Integrating Environmental Considerations</b>				
	<b>Emphasise Environmental Considerations in Strategic Planning</b>	<b>Enhance Environmental Management Capacity of Key Development Ministries</b>	<b>Strengthen Capacity for Environmental Review, Monitoring and Performance Audits</b>	<b>Increase Voluntary Compliance with Environmental Regulations</b>	<b>Maximise Economic and Social Benefits from Sustainable Use of the Environment and Natural Resources</b>
<b>Incorporating environmental considerations in NDS 2008-2011</b>	The proposed assistance relates directly to this priority action area.	If environmental considerations are incorporated into all key policy areas this initiative will ensure that Ministries have the capacity to implement such policies.	This project will ensure that capacity exists over the complete environmental management cycle, thus giving effect to environmental considerations in key policy areas.	This project will help ensure that individuals, families and communities also contribute to achieving the environmental outcomes identified for each of the key policy areas	This is likely to be one of the key policy areas in NDS 2008 – 2011.
<b>Enhancing capacities of development Ministries to reduce environmental constraints</b>	If environmental considerations are incorporated into all key policy areas this initiative will ensure that Ministries have the capacity to implement such policies.	The proposed assistance relates directly to this priority action area.	Environmental reviewing, monitoring and performance auditing will be a major focus of the proposed assistance.	The proposed assistance will include a variety of strategies for improving environmental performance and reducing constraints – increasing voluntary compliance will be one such strategy.	The project will encourage development Ministries to explore ways to maximise economic and social benefits from sustainable use of the environment.
<b>Strengthening environmental monitoring and performance audits</b>	The proposed assistance will help ensure that addressing environmental considerations in key policy areas will be successful.	While the emphasis in the project will be on building the capacity of the Environment Division, there will also be some strengthening of capacity in the development Ministries.	The proposed assistance relates directly to this priority action area.	The proposed assistance will help ensure a comprehensive approach to environmental management, including a balance between voluntary compliance and enforcement of regulations.	Environmental monitoring and performance audits will help ensure that added uses of the environment are sustainable.

Proposed Assistance	CEA Priority Action Areas for Integrating Environmental Considerations				
	Emphasise Environmental Considerations in Strategic Planning	Enhance Environmental Management Capacity of Key Development Ministries	Strengthen Capacity for Environmental Review, Monitoring and Performance Audits	Increase Voluntary Compliance with Environmental Regulations	Maximise Economic and Social Benefits from Sustainable Use of the Environment and Natural Resources
<b>Increasing voluntary compliance</b>	Increased voluntary compliance will help give effect to the environmental outcomes associated with each of the key policy areas.	Environmental management will be based, in part, around voluntary compliance that helps achieve the environmental goals of each of the development Ministries.	The benefits of increased voluntary compliance will be demonstrated through the review, monitoring and audit procedures.	The proposed assistance relates directly to this priority action area.	Increased voluntary compliance will help maximise the economic and social benefits arising from sustainable use of the environment.
<b>Maximising benefits from sustainable use of the environment</b>	This is likely to be one of the key policy areas in NDS 2008 – 2011.	In order to maximise the economic and social benefits arising from sustainable use of the environment development Ministries will need improved capacity for environmental management.	In order to maximise the economic and social benefits arising from sustainable use of the environment there will need to be improved environmental management, including monitoring and audits	Increased voluntary compliance will help maximise the economic and social benefits arising from sustainable use of the environment.	The proposed assistance relates directly to this priority action area.
<b>Increasing use of local resources</b>	This is likely to be one of the key policy areas in NDS 2008 – 2011.	Sustainable and beneficial use of local resources will be aided by improved environmental management capabilities in the development Ministries.	Sustainable and beneficial use of local resources will be aided by increased capacity for environmental monitoring, audits and reviews.	Sustainable and beneficial use of local resources will be aided by improvements in compliance with environmental regulations, especially if this is on a voluntary basis.	Parallel initiatives related to sustainable use of the environment and natural resources will create many beneficial synergies.

nutritious and often more expensive local foods. Catching reef fish and other marine resources, and selling them locally to fund the purchase of canned fish and other imported foods, is not an uncommon practice. These observations highlight some of the many challenges now being faced by those responsible for ensuring high standards of environmental quality, natural resource conservation and human health. Commercial exploitation of the in-shore fishery, albeit for predominantly local consumption, has placed immense pressure on the resource. Catch levels are declining rapidly, due to this unsustainable extraction. Food security and affordability have both declined, especially in South Tarawa, and there is a real risk that knowledge of traditional food production and processing will be lost. Many human health indicators, especially those related to so called life style diseases such as diabetes, are showing worrying trends.

112. The complex nature of the issues, and the many dimensions to the solutions, highlight the need for greater cooperation between Government, the private sector, and civil society, including community leaders and members, and NGOs. Currently in Kiribati the small size of both the private sector and, importantly, the NGO community, mean they play relatively minor roles in promoting and achieving sustainable use of the environment and natural resources in order to improve individual and community well-being. Until their influence and involvement increases, in part through a transition from the generally less effective efforts of Government, it is unlikely that the necessary improvements in community well-being and environmental and natural resource management will materialize.

113. The Government might best focus its efforts on initiatives that will assist individuals and communities to make and implement decisions that result in more productive and sustainable use of their resources, including supporting the work of those who are efficient and effective in providing development assistance that will build the capacity and hence self reliance of needy families and communities. The two key practical acts by Government that will help achieve these outcomes are strengthening the enabling environment for environmental management and working to strengthen policies and procedures that integrate environmental considerations into current and new development plans, project implementation and development assistance.

## **1. Enhancing the Enabling Environment for Improved Management of the Environment and Natural Resources**

114. **Legislation.** This report has already highlighted issues related to the scope and enforceability of the environmental legislation. The benefits that would arise from increased voluntary compliance have also been outlined. There is general agreement that the present Environment Act is inadequate in terms of meeting the objectives of Government and the community at large with respect to the sustainable use of the environment and natural resources. Draft amendment bills that would strengthen the environmental legislation have been prepared and presented to Cabinet. To date these initiatives have not been considered by Parliament. Until the legislation is strengthened the current high levels of non-compliance will likely continue. In addition, many activities that have adverse impacts on the environment and natural resources are presently unregulated. As is already being proposed, the legislation should be more comprehensive in terms of the environmental components, natural resources and activities that are regulated.

115. All legislation should be reviewed to ensure that it is not providing perverse incentives that result in environmental degradation but is, to the contrary, encouraging decision making and actions which result in good environmental



outcomes. For example, the Government could encourage the local production of healthy foods by not giving a tariff advantage to foods such as mutton flaps and turkey tails. It could also encourage the uptake of environmentally sound technologies by reducing import tariffs. Recycling could be promoted by way of regulations that extend the present requirements for refundable deposits on recyclable products and further support the engagement of the private sector in recycling activities.

**116. Enabling the Sustained and Productive Use of Land.** This is a high priority. Progress in this regard requires concerted action in at least three respects, namely: (i) facilitating timely and equitable use of land; (ii) ensuring land use is consistent with land capability and with adjacent land uses; and (iii) assisting land owners and users to make informed decisions regarding sustainable use of the land resource, and the environment in general, and to implement them in a timely and successful manner. All three requirements are the current and proposed focus of ADB assistance, especially with respect to outer island growth centres. The challenges to secure the successful transfer of Government land into long-term private tenure, and to prepare and achieve compliance with land use plans and related regulations, should not be underestimated. It is not only important to raise the awareness of land users with regard to both their rights and responsibilities, but also to ensure that they are fully aware of the environmental and related consequences of non-compliance. Issues related to the adjudication, survey, registration, and issuance of land use permits need to be resolved in order to enhance access to land for development.

**117. Performance-based Budgeting.** Performance-based budgeting can provide a range of benefits related to public sector management and service delivery. While Kiribati has made considerable progress towards a robust process of economic and development planning, especially by ensuring strong functional linkages between the NDS, MOPs and private enterprise business plans, little progress has been made with respect to performance-based budgeting. This is unfortunate as performance-based budgeting can bring substantial improvements in environmental management, for example by providing an incentive to meet environmental targets that would be included in all MOPS, and not just that for the MNREM. Such developments would in themselves represent a major step towards integrating environmental considerations in economic and wider development activities and would do much to elevate the status of environmental management within Government operations. The environmental road map (Table 2) provides targets for environmental performance, not only by Government but also by the private sector. In the latter there are growing and substantial opportunities for environment- and natural resource-based small business enterprises.

**118.** Government may wish to take advantage of the fact that sound environmental management is a profitable investment rather than an unproductive cost. This could be reflected in the core functions and the targets of agencies. Those agencies that demonstrate an ability to meet their performance targets, including those related to the environment and natural resources, could be treated more generously during the Government budgeting process.

**119. Institutional Strengthening.** Cooperation between Government agencies is far from optimal. Arguably the situation is worst with respect to environmental and natural resource management. The incorporation of environmental targets and performance indicators in all MOPs would go a long way towards achieving greater coordination of environmental policy and management initiatives, not only between Government agencies but also with the private sector and NGOs.

120. **Upgrading Staff Knowledge and Skills.** Government, the private sector, communities and individuals are having to respond to the growing need for improved environmental and natural resource management. Such responses need to be supported by coordinated and continuing efforts to enhance the knowledge and skills of all the players. The roles and responsibilities of staff in Government agencies are changing rapidly, as are the demands being placed on the private sector and NGOs. These changing roles and responsibilities need to be reflected in training and other capacity building initiatives.

121. **Supporting Environmental Advocates and Champions.** Opinion leaders in the community can play a key role in helping ensure that environmental considerations are integrated into economic and development planning processes. This can be achieved as much by highlighting the widespread and diverse benefits of improving and maintaining environmental quality as by documenting systemic and specific failures that lead to environmental degradation and unsustainable use of natural resources. Kiribati is not yet well endowed with environmental advocates and champions. Not only does the Government have an important role to play in helping to build such expertise within the private sector and civil society, but it also has an obligation to ensure that it is used productively to complement rather than substitute for the work of Government employees. In a true partnership there will be mutual respect and a shared vision regarding the management of Kiribati's environment and natural resources.

122. **Information Acquisition and Management Systems.** Information management systems can be used to improve the quality and environmental outcomes of decision making, as well as contribute to environmental compliance and enforcement. Increasingly decision makers and managers are being provided with targeted information that allows them to be more successful in fulfilling their responsibilities. However, many information management systems suffer from a dearth of relevant data, much of which can only be acquired through surveys, assessments and monitoring programmes. Currently in Kiribati these activities are poorly resourced, managed and implemented. A major constraint on the successful integration of environmental considerations in development planning processes is the lack of the information required to demonstrate the need for Government interventions and for the allocation of appropriate financial and other resources. Information is also required to determine the optimum nature and timing of interventions, and to demonstrate the success, or otherwise, of the actions.

## **V. INTEGRATING ENVIRONMENTAL CONSIDERATIONS IN DEVELOPMENT PLANNING PROCESSES**

123. The preference in Kiribati is to use "integrating" rather than "mainstreaming" when discussing the infusion of environmental considerations in economic and development planning processes. There is no difference in intent or in the desired outcomes – it is simply a matter of preferred wording. The preference is given effect in the discussion that follows.

124. Requirements for integrating environmental considerations in development planning processes in Kiribati can be grouped into three broad categories.

125. **Need to Understand the Conceptual and Practical Dimensions, and Benefits, of Integrating Environmental Considerations.** At one level, integrating environmental considerations into economic and development planning is conceptually simple. It is achieved when all policies, plans and operational procedures ensure that all development initiatives, regardless of focus, scale,

delivery mechanisms and the players involved, incorporate measures that will minimize adverse environmental impacts and maximize any opportunities for the environment to contribute in a positive way to social and economic development.

126. Why integrate environmental considerations? Again, the reasons are relatively straightforward. As has been shown above, sound environmental policies and management practices underpin such important economic activities as agriculture, tourism and fisheries. They also do much to reduce hardship and improve human health. Investments in large infrastructure projects will often be more successful if their designs incorporate the latest, locally relevant information on natural hazards such as strong winds, storm surges and extreme rainfall events.

127. Despite the important role played by the environment in social and economic development, responsibilities for environmental policy, planning and management are commonly allocated to a ministry that is marginalized relative to the powerful, vital and relatively well resourced ministries with responsibilities for economic development, social services and infrastructure. Pragmatically, it often comes down to the fact that the efforts of these ministries win votes. Despite the frequent rhetoric, good environmental policies and management practices win few if any votes.

128. It is very difficult for a standalone government ministry with environmental responsibilities to secure the cooperation of the powerful line ministries that set development policies and fund the related projects. Staff in these ministries often consider that taking into account the environment implications of development initiatives adds to and complicates their work load. In their view this is unwarranted, given that paying attention to potential environmental impacts will likely delay, and perhaps even prevent, project implementation.

129. An alternative model is to motivate and empower the powerful line ministries to assess the environmental implications of their policies, plans and work programmes and to minimize adverse environmental impacts and maximize the appropriate use of the environment and natural resources in ways that add value to their efforts. Clearly this requires substantial changes in mindsets, knowledge and skills, which is why capacity and acceptance are also key factors in achieving the integration of environmental considerations. It also results in environmental considerations competing against development and social service programmes for not only resources but also for the attention of the politicians and senior officials who have oversight of these important programmes.

130. This still leaves the matter of how to integrate environmental considerations in practice. Kiribati has yet to implement a whole-of-government effort to integrate wider environmental considerations. As noted above, a start has been made through decisions regarding the institutional arrangements for KAP. The MFED and the Office of the Beretitenti are both actively involved, and taking leadership, in project oversight and management. Thus one critical aspect of integrating adaptation to climate change in economic and development planning processes has been achieved. It remains to be seen if the other requirements for successful integration have also been met.

131. Integrating environmental considerations also requires that there be a high level policy directive that such integration will occur. For Kiribati this might best be achieved by including such a statement in a set of principles that guide the content and implementation of the NDS. Subsequent policy goals and priorities should give effect to this statement. A similar approach could also be followed in each of the MOPs and Public Enterprise Business Plans, thereby providing the policy context for

all ministries and other Government agencies. An important requirement will be to ensure there are also specific policy and legal frameworks and strategies to address issues or themes that cut across more than one ministry or enterprise — for example, environmental management, urban development, and private sector development.

132. The plans of ministries and public enterprises can provide a model for the private sector and civil society to emulate. In this way, integrating environmental considerations progresses from being a whole-of-Government policy and practice to a whole-of-country practice. In many countries the private sector and NGOs lead the integration process, albeit within the purview of their own operations. The smallness of both the private sector and NGOs in Kiribati suggests that the Government is going to have to play a much stronger leadership and facilitation role than might normally be the case.

133. All plans, irrespective of the ministry or public enterprise, should include: (i) measurable and time bound targets that encompass environmental outputs and outcomes in conjunction with the conventional outputs and outcomes of the agency - the environmental targets should reflect the commitment in the relevant institution to minimize adverse environmental impacts and maximize the appropriate use of the environment and natural resources in ways that add value to their efforts; (ii) establishing and monitoring a suite of indicators which can be used to assess the extent to which the environmental targets have or have not been achieved; (iii) the requisite reporting and quality improvement activities, based on the targets and indicators; and (iv) recognition that future allocations of financial resources to the institution will, at least in part, reflect the extent to which the agreed targets have been met.

134. Finally, though this is in fact a cyclic process, the Ministry of Finance and Economic Development should use the information contained in the reports as input to the performance-based budgeting process.

135. Given that in Kiribati project planning and programming is largely ministry based it is perhaps unwise to think that, even in the ideal situation when environmental considerations are fully integrated into the economic and development planning process, all the opportunities and constraints associated with such cross-cutting issues and themes will be fully accounted for. Activities by one agency of Government may impact adversely on the environmental performance of another agency, whether it be in terms of exacerbating negative environmental effects or reducing the extent to which the environment adds value to the activities undertaken by that agency. Thus there is need to also ensure that the policy framework and operational procedures address the full range of cross-sectoral environmental considerations.

136. **Need for a Mandate and Policy Guidance.** Public sector institutions need to be mandated to integrate environmental considerations into their planning and operations. Otherwise they are likely to assume that environmental policy, planning and management are largely, if not exclusively, the responsibility of the ministry that includes the environmental portfolio. In the case of Kiribati this is Ministry of Environment, Lands and Agriculture Development. Conversely, the mandate of that ministry should be clear about its roles in environmental policy, planning and management, in light of the responsibilities assigned to other Government institutions. Clearly there is value in ensuring that Ministry of Environment, Lands and Agriculture Development recognises its responsibility to address the full range of cross-sectoral environmental considerations.

137. **Acceptance, Motivation and Capacity.** Integrating environmental considerations in economic and development planning will succeed only if there is informed and willing acceptance of such a whole-of-Government approach. This is a major hurdle, given that many people will see the work as an additional burden, for little personal gain. It calls for concerted efforts to engender a collective responsibility for environmental stewardship

138. Successful integration of environmental considerations also requires that relevant individuals in Government institutions have the understanding and skills to ensure that ministry, public enterprise and cross-sectoral policies and plans, including the NDS, include strategies and actions to minimize adverse environmental impacts and maximize the appropriate use of the environment and natural resources in ways that add further value to intended outcomes. It is also important that in each institution there are individuals with the ability to establish environmental performance targets and identify, monitor and evaluate appropriate performance indicators. Finally, all relevant Government institutions need to be able to access the expertise required to undertake the environmental assessments required as part of project planning and programming.

## **VI. CONCLUSIONS AND RECOMMENDATIONS**

139. This CEA for Kiribati focuses on the general environmental status and trends in the country, including the role of the environment and natural resources in the economy, the key environmental constraints and opportunities as well as the policy, legislative, institutional, and budgetary frameworks for environmental management. It also identifies the principal constraints on, and barriers to, improved environmental management, priority areas in policy, institutional and legislative mechanisms, as well as programmes and projects that will help to mainstream environmental considerations into economic and development planning and identification of the main environmental opportunities associated with ADB's assistance to Kiribati. This includes recommending incorporation of environmental considerations in programmes and projects in the pipeline as well as new priority actions and programmes at national and community levels. The aim is to proactively incorporate, integrate and support sound environmental management practices, not only in the economic and development planning and policy-making for Kiribati, but also in specific project-level interventions.

140. Participatory consultations, supported by studies of relevant policy and technical documents, and several case studies, resulted in several key messages, notably:

- Population pressures on the environment and natural resources are high; these will continue to increase as the population grows, even if there is successful implementation of the Government's new population policy; thus major improvements in environmental management policies and practices will still be needed;
- There are important linkages between environment conditions and quality of life - e.g. incidence of diarrhoea and dysentery in Tarawa is much higher than the national average, and especially so for Betio;
- Changes in the global economy impact families and communities in very tangible ways, such as increased costs for utilities and transport as a result of higher costs for petroleum fuels; the current use of subsidies to help isolate the population from such changes is unsustainable; development of indigenous energy sources is feasible and should be seen as a high priority;

- Some development initiatives have enhanced environmental quality and thus human health and well-being, but further improvements are needed; e.g. improved drinking water quality; and
- There are large economic and social consequences of environmental change – e.g. ocean temperatures and offshore fisheries; drought and human health; rainfall and copra production.

141. Many opportunities for environmental and related improvements were identified as a result of both consultations and research. These could bring many benefits to the Kiribati economy as well as to civil society, especially the poor and other marginal groups. However, a number of constraints on achieving these improvements were also recognized. All are resolvable, with commitment and cooperation.

142. A review of ADB's current investment portfolio was also undertaken. Based on the preceding analysis and review, priority areas for action were identified and a road map for the environment sector was prepared. Five priority areas for action that would result in integration of environmental considerations economic and development planning were identified, namely:

- Increase emphasis on environmental considerations in strategic planning;
- Enhance environmental management capacity of key development ministries;
- Strengthen capacity for environmental review, monitoring and performance audits;
- Increase voluntary compliance with environmental regulations; and
- Maximise economic and social benefits from sustainable use of the environment and natural resources.

143. Consistent with the road map, specific recommendations were developed for mainstreaming the environment in projects in ADB's future investment programme for Kiribati. The planned ADB assistance was assessed in terms of its ability to address the need for action in each of the five priority areas. This assistance can go some way to addressing the needs in the priority areas. However, it is recommended that the planned assistance be complemented by addition of the following activities:

- Incorporating environmental considerations in NDS 2008-2011;
- Enhancing capacities of development ministries to reduce environmental constraints;
- Strengthening environmental monitoring and performance audits;
- Increasing voluntary compliance;
- Maximising benefits from sustainable use of the environment; and
- Increasing use of local resources.

144. It is further recommended that the necessary actions be undertaken to implement the environmental road map and thereby address the five priority action areas. There is also a need to strengthen the enabling environment for environmental management and to integrate environmental management into existing and new development policies, plans and project implementation.

145. There is also an urgent need to mainstream environmental and natural resource management considerations in the NDS. There are three principal reasons: (i) such a move would signal a commitment to improving on current management regimes - most indicators suggest that environmental quality is declining and natural resources are being consumed at unsustainable rates; (ii) the future of Kiribati rests on its people and its environment and natural resources; and (iii) the population

growth rate for Kiribati is high, with serious implications for the environment and natural resources if management practices are not improved dramatically.