ASIAN DEVELOPMENT BANK

DRAFT FINAL REPORT

TA 4605-COO:
STRENGTHENING DISASTER MANAGEMENT AND MITIGATION
COMPONENT 2: PREVENTIVE INFRASTRUCTURE MASTER PLAN

November 2006

VOLUME 3:
INSTITUTIONAL ANALYSIS & PREVENTATIVE CAPACITY DEVELOPMENT

The MPC Group International
MICROFINANCE • PLANNING • COMMUNITY

In association with

Fraser Thomas
CURRENCY EQUIVALENTS
(as of 2 November 2006)

Currency Unit – New Zealand Dollar (NZ$)
NZ$1.00 = US$0.67
US$1.00 = NZ$1.48

ABBREVIATIONS

AADDT  Average annual daily traffic
AC     Asphalt concrete
ACC    Aid Coordinating Committee
ADB    Asian Development Bank
ADSL   Asymmetric Digital Subscriber Line
AMD    Aid Management Division
APS    Aitutaki Power Supply
AS/NZS Australian Standard/New Zealand Standard
ATC    Air Traffic Control
AusAID Australian Agency for International Development
AVG    Average
BOD    Biochemical oxygen demand
CAANZ  Civil Aviation Authority of New Zealand
CAPEX  Capital Expenditure
CBDAMPIC Community Based Development of Adaptation Measures for Pacific Island Countries
CEA    Cyclone Emergency Assistance
CI     Cook Islands
CIAAA  Cook Islands Airport Authority
CIANGO Cook Islands Association of NGO’s
CIGOV  Cook Islands Government
CIIC   Cook Islands Investment Corporation
CIMMRISP Cook Islands Ministry of Marine Resources Institutional Strengthening Project
CIPA   Cook Islands Port Authority
CISD   Cook Islands Statistics Office
CITTC  Cook Islands Trade Training Center
CITV   Cook Islands Television
CLIMAP ADB Climate Change Adaptation Program for the Pacific
COPED  Concrete coastal protection device
CROP   Council of Regional Organizations
CRRP   Cyclone Recovery and Reconstruction Program
CRP    Climate Risk Profile
DBST   Double Bituminous Surface Treatment
DME    Distance Measuring Equipment
DNHRD  Department of National Human Resource Development
DOH    Department of Health
DPA    Development Partnership Agreement
DRM    Disaster Risk Management
EC     Evacuation Center
ECIL   Express Cook Islands Agents
EIA    Environmental Impact Assessment
EMC    Emergency Management Center
EMCI   Emergency Management Cook Islands
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ENSO</td>
<td>El Niño/Southern Oscillation</td>
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<td>FY</td>
<td>Financial Year</td>
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<td>GCM</td>
<td>Global Climate Model</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>gensets</td>
<td>Generator sets</td>
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<td>GHD</td>
<td>GHD Consultants</td>
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<td>HRD</td>
<td>Human Resource Development</td>
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<td>IA</td>
<td>Island Administration</td>
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<td>IC</td>
<td>Island Council</td>
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<td>ICAO</td>
<td>International Civil Aviation Organization</td>
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<tr>
<td>ICT</td>
<td>Information, Communications and Technology</td>
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<tr>
<td>IEE</td>
<td>Initial Environmental Examination</td>
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<tr>
<td>IGCI</td>
<td>International Global Change Institute</td>
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<td>ILS</td>
<td>Instrument Landing System</td>
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<td>IMP</td>
<td>Infrastructure Master Plan</td>
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<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<td>LBGES</td>
<td>Labor-based Government Equipment Supported</td>
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<td>LPG</td>
<td>Liquefied Petroleum Gas</td>
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<td>MC</td>
<td>Micro Shelter</td>
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<tr>
<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>MFEM</td>
<td>Ministry of Finance &amp; Economic Management</td>
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<td>MMR</td>
<td>Ministry of Marine Resources</td>
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<td>MOH</td>
<td>Ministry of Health</td>
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<td>MOT</td>
<td>Ministry of Transport</td>
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<td>MOW</td>
<td>Ministry of Works</td>
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<td>MSL</td>
<td>Mean Sea Level</td>
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<tr>
<td>NBC</td>
<td>National Building Code</td>
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<td>NDB</td>
<td>Non-directional Beacon</td>
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<td>NDMO</td>
<td>National Disaster Management Office</td>
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<td>NDRMC</td>
<td>National Disaster Risk Management Council</td>
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<td>NDRMP</td>
<td>National Disaster Risk Management Plan</td>
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<td>NED</td>
<td>National Energy Division</td>
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<td>NEDS</td>
<td>National Economic Development Strategy</td>
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<td>NES</td>
<td>National Environment Service</td>
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<td>NGO</td>
<td>Non Government Organization</td>
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<tr>
<td>NIWA</td>
<td>National Institute for Water and Atmospheric Research</td>
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<td>NSDP</td>
<td>National Sustainable Development Plan</td>
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<td>NWS</td>
<td>National Waste Strategy</td>
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<td>NZ</td>
<td>New Zealand</td>
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<td>NZAID</td>
<td>New Zealand Agency for International Development</td>
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<td>O&amp;M</td>
<td>Operations &amp; Maintenance</td>
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<tr>
<td>OHRD</td>
<td>Office of Human Resources Development</td>
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<td>OI</td>
<td>Outer Islands</td>
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<td>OICDU</td>
<td>Outer Islands Infrastructure Development Unit</td>
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<td>OIDP</td>
<td>Outer Islands Development Program</td>
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<td>OMIA</td>
<td>Office of the Minister of Island Administration</td>
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<td>OPEX</td>
<td>Operating Expenditure</td>
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<td>OPM</td>
<td>Office of the Prime Minister</td>
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<tr>
<td>PAB</td>
<td>Project Adaptation Brief</td>
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<td>PCC</td>
<td>Project Coordinating Committee</td>
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<td>PD</td>
<td>Police Department</td>
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<td>PDU</td>
<td>Project Development Unit</td>
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<tr>
<td>PERCA</td>
<td>Public Expenditure Review Committee and Audit</td>
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</table>
PFL  Pacific Forum Line
PICCAP  Pacific Islands Climate Change Assistance Program
PIU  Project Implementation Unit
PMG  Pitt Media Group
PPP  Public-Private Partnership
PPU  Policy and Planning Unit
PSC  Public Service Commission
REAP  Rarotonga Environmental Awareness Program
RIC  Rarotonga Island Council
ROW  Right-of-way
SBST  Single Bituminous Surface Treatment
SLIS  Survey and Land Information Service
SOE  State Owned Enterprises
SOPAC  Pacific Islands Applied Geoscience Commission
SPC  Secretariat to the Pacific Community
SPCZ  South Pacific Convergence Zone
SRES  Special Report on Emissions Scenarios
TA  Technical Assistance
TAU  Te Aponga Uira
TCI  Telecom Cook Islands
TEU  Twenty foot equivalent unit
TNZ  Telecom New Zealand
TOR  Terms of Reference
TVNZ  New Zealand Television
UNDP  United Nations Development Program
VASIS  Visual Approach Slope Indicator System
VOR  Variable Omni-range
WDC  Waste Disposal Center
WHO  World Health Organization
WMRU  Waste Management and Recycling Unit
WWD  Water Works Division

WEIGHTS AND MEASURES

\begin{itemize}
g & gram 
g/c.d & gram per capita per day (waste generation) 
ha & hectares 
kL & kiloliter 
km & kilometer 
km^2 & square kilometers 
L & liters 
L/c.d & liters per capita per day (water use) 
kbs & kilobytes per second 
kg/c.d & kilogram per capita per day (waste generation) 
m & meters 
m^2 & square meters 
m^3 & cubic meters 
mg & milligram 
mg/L & milligram per liter (concentration) 
m/s & meters per second 
mm & millimeters 
\degree C & degrees centigrade 
\end{itemize}
NOTES

(i) The fiscal year (FY) of the Government of the Cook Islands ends on 30 June. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2006/2007 ends on 30 June 2007.
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Map: Cook Islands

Source: http://www.cook-island.maps-pacific.com/
I. REPORT ORGANIZATION

1. The Final Report is organized into 7 volumes as shown in Figure 1. Each volume is designed to be a stand-alone document so that they can be used independently by each relevant agency.

Figure 1: Organization of Final Report

2. **Volume 1 – Master Plan Overview** – is an executive summary of the entire TA, and draws together key sections of the other volumes, and information from the Inception and Mid Term Reports. It attempts to address, in a single volume, the requirements of the Project TOR.

3. **Volume 2 – Preventative Infrastructure Master Plan** – is one of the main volumes of the project and provides the background and rationale for the proposed infrastructure in each of the sectors. It ends by proposing a comprehensive, phased infrastructure master plan across each of the designated sectors.

4. **Volume 3 - Institutional Analysis & Preventative Capacity Development** – forms the other key section of the project. It reviews existing institutional arrangements and considers alternatives for change that would enable new infrastructure initiatives to be more effective.

5. **Volume 4 - Climate Change Considerations & Building Codes** – The basis for the project has been the issue of climate change. This volume updates the Cook Islands Climate Risk Profile and examines the climate change implications on each of the proposed infrastructure projects in the Master Plan. A further section provides a consideration of changes that should be made to the Building Code of the Cook Islands.

6. **Volume 5 - Project Profiles** – This volume is an assembly of each of the proposed infrastructure project profiles together with tracking information.

7. **Volume 6 - Stakeholders Meeting Summaries** – This volume is a
documentation of all key stakeholder meetings undertaken during the TA. It is included as a reference document to be used by future consultants (and CIGOV) as a supplement to their own investigations.

8. **Volume 7 - Planning & Engineering Data** – This volume contains all of the cost and engineering data used by the team in the development of the Master Plan profiles.
II. INTRODUCTION

9. The objective of this volume is to assess the governance, effectiveness and policy frameworks for the delivery of essential basic services; to assess the management of infrastructure assets and the management and disbursement of disaster recovery funds; and to make recommendations for changes to improve effectiveness and efficiency.

10. The first section of the volume will describe the current government structures and identify which agencies are relevant to the current Technical Assistance (TA).

11. The second section will identify, discuss and make recommendations regarding the following issues that cut across all of the infrastructure sectors.

   A. A National Economic Development Strategy
   B. Project Implementation
   C. Management and Maintenance of Outer Islands Infrastructure
   D. Private Sector Participation
   E. Legislation and Regulations
   F. Land
   G. Municipal Services
   H. Monitoring Water Resources
   I. The Principle of User Pays or Cost Recovery.

12. The third section of the volume will undertake a detailed analysis for each sector. Existing policy, legislation and regulations will be assessed. Business plans and the responsibilities and performance of participating stakeholders will be reviewed. The analysis will identify institutional constraints, discuss alternative strategies for addressing these constraints, and make specific recommendations for improved sector efficiency and service delivery.

13. The analysis of crosscutting and sector-specific issues and proposals for institutional changes will be summarized in the final section of the volume.

III. CURRENT SITUATION

14. Faced with a financial crisis that included difficulties to meet loan repayments and a treasury struggling to make fortnightly salary payments, the Cook Islands (CI) government undertook wide-ranging restructure and reform of agencies between 1996 and 1998.

15. The number of government ministries and departments were drastically reduced through rationalization and consolidation. For example, the ministries and departments of Treasury, Taxation, Customs, Inland Revenue and Statistics were merged into a single Ministry of Finance and Economic Management (MFEM). The number of public servants was reduced from over 3,000 to around 1,400. This latter number has increased over time to a current payroll of around 1,600. Figure 2 depicts the existing agencies, presented under the relevant Ministers.

16. Part of the restructure of 1996 was the incorporation as State-owned
enterprises (SOE) of the financially sustainable activities relating to the provision of electricity to Rarotonga and the operation of international airports and harbors for Rarotonga and Aitutaki.

17. Coupled with the restructure and downsizing of the public service was the significant decentralization of functions to Island Governments. Difficulties with capacity soon resulted in the recentralization of both education and health services except for Palmerston and Rakahanga Island which maintain full devolution for all Government Services.

18. Detailed institutional profiles including an analysis of relevant legislation and regulations, albeit with an emphasis on environmental management, have been carried out in 2003 under Asian Development Bank (ADB) TA 4273-COO (Technical Assistance to the Cook Islands for Legal and Institutional Strengthening of Environmental Management) for the majority of the agencies of government. The quality of this work is such that no replication will be carried out. However the institutional profiles will be reviewed with respect to the essential assets considered under the TA scope and included in the sector analysis below.

IV. CROSS-CUTTING ISSUES

19. This section of the Volume discusses and makes recommendations regarding issues that have been identified to cut across all groups of the infrastructure sectors.

A. A National Economic Development Strategy

20. Since the meltdown of the early 1990s, good financial management and discipline have brought fiscal stability to the economy. This has not been matched with the development of a National Economic Development Strategy (NEDS) based on economic realities and social priorities. While the National Sustainable Development Plan (NSDP) provides a basis for such planning and initiates the establishment of service baseline data, indicators and targets, it is questionable if these targets are either realistic or reflective of the true economic potential and social priorities of the country.

21. The lack of a realistic economic strategy hampers the development of genuine policy and the translation of that policy into business and action plans with achievable targets. The questionable validity of many of the indicators in business plans, the absence of baseline data, and the unrealistic nature of associated targets are a reflection of the absence of pragmatic vision for future economic and social goals. That the monitoring of these indicators is superficial at best is a logical consequence of this situation.
Figure 2: Existing Cook Islands Government Agencies

Prime Minister

1. Office of the Prime Minister
2. National Research & Dev. Institute

Deputy Prime Minister and Minister of Finance

1. Ministry of Finance & Economic Management
2. Financial Supervisory Commission
3. Financial Intelligence Unit
4. Audit (PERCA)
5. Ombudsman
6. Attorney General
7. Development Investment Board
8. Small Business Enterprise Centre
9. Commerce Commission
10. National Superannuation
11. Parliamentary Services
12. Ministry of Health

Minister of Agriculture

1. Ministry of Agriculture
2. Ministry of Internal Affairs, Youth & Sports
3. Punanganui Market
4. Non-Government Organizations
5. Ministry of Works

Minister of Justice

1. Ministry of Transport
2. Civil Aviation
3. Shipping
4. Ministry of Justice
5. Public Service Commission
6. Cook Islands Investment Corporation
7. Ports Authority
8. Airport Authority
9. Bank of the Cook Islands
10. Te Aponga Uira

Minister of Tourism

1. Tourism Cook Islands
2. Ministry of Cultural Development
3. Historic Places Trust
4. Ministry of Marine Resources
5. Ministry of Foreign Affairs & Immigration

Minister of Outer Islands Administration

1. Ministry of Outer Islands Administration
2. National Environment Services
3. Natural Heritage Suburbs Development
4. House of Ariki & Koutu Nui
22. It is recommended that the policy and planning capacity of the Office of the Prime Minister (OPM) be strengthened through the development of a Policy and Planning Unit (PPU). The PPU would provide guidance and leadership in the development of a NEDS and subsequent sector policies. The PPU would then be able to assist public institutions in the development of business and action plans with indicators, baseline data and targets that would be realistic and capable of providing valid information to an ongoing and effective monitoring and evaluation system.

23. A capable PPU would establish a monitoring and evaluation system and monitor sector performance against a suite of valid indicators measuring efficiency and effectiveness. The analytical reports produced would then better inform decision-making and foster productive management. Carefully chosen indicators can also provide a broad measure of the social, environmental and economic impact of an overall infrastructure programme. A regular and sustained monitoring programme will assist in assessing whether expectations are being met, in the early identification of problems and constraints, and in the development of appropriate and timely interventions.

24. Both the Public Service Commission (PSC) and Audit Office conduct annual evaluations. The former monitors the performance of the contractual obligations of heads of ministries and island secretaries. The latter monitors and evaluates financial performance.

25. Despite a lack of capacity, OPM strives to meet regional and international obligations such as reporting on nationally, regionally and globally agreed targets, e.g. the Millennium Development Goals (MDG) and Pacific Plan.

B. Project Implementation

26. Government is concerned with the inability of its institutions to: manage and disburse disaster recovery funds; develop projects that meet national, international or bilateral donor criteria in a timely fashion; implement a project cycle; and achieve a high rate of project completion.

27. It is stated that the various line ministries are not capable of developing the necessary documentation to initiate projects. Even when project documentation is developed and funds are allocated, line ministries and Island Administrations (IAs) have not been capable of completing projects;

28. The Aid Management Division (AMD) was established as an interim organization to coordinate the implementation of development projects for the Outer Islands (OI) until such time as a permanent and well resourced organization could be established. Initially AMD coordinated OI infrastructure construction and upgrade projects funded under the Development Partnership Agreement (DPA) between the New Zealand Government, the Australian Government and the Cook Islands Government.

29. The DPA established robust and transparent procedures for all aspects of the project cycle. The success of these processes has led to their increased use in the implementation of projects funded under the government’s own capital expenditure (CAPEX) budget. Government has indicated that it is considering using the DPA process
(with minor additions to meet loan covenants) for the implementation of all future major projects.

30. Cabinet, as late as mid October 2006, instructed the PSC and the MFEM to put in place a well resourced institutional structure to ensure development projects were developed, implemented and completed in a timely fashion. This TA needed to identify an institutional structure and processes that would provide government with the best possible chance of implementing the infrastructure projects in the master plan.

31. Wide-ranging consultations with government ministries, statutory authorities and Island Governments led to a high-level consultation with central Agencies to discuss options for an institutional structure to undertake the planning, implementation and completion of projects. The consensus was that a short- to medium-term solution was required and that this would best be done by strengthening one section of government within a central agency, preferably within MFEM, for a period of 5 to 6 years. The AMD was identified for immediate expansion. It was noted that the Cook Islands Investment Corporation (CIIC) had successfully implemented several infrastructure projects in recent months.

32. It was proposed that the AMD would be restructured and would be renamed as the Project Development Unit (PDU). The proposed PDU will:

- coordinate the planning of development projects;
- facilitate national development investment programmes and priorities for consideration by the Project Coordination Committee (PCC), Aid Coordination Committee (ACC) and Cabinet;
- act as an overall 'Executing Agency' to ensure that the development projects selected by Cabinet are implemented in a timely manner;
- appoint an 'Implementing Agent' for each of the selected projects;
- ensure that funds from various sources (government, donors and external loans) are made available as required;
- manage and monitor project implementation to ensure that government and donor requirements are met; and
- report to Cabinet through ACC on the implementation of development projects.

33. The PDU would require both project management and technical capacity with maximum utilization of local capacity through inter-agency transfers. However, if internal transfers would compromise existing ministry performance, external capacity should be utilized to ensure the timely recruitment of staff to all positions.

34. Apart from two full-time technical staff, the unit would have the capacity to engage short-term (1 to 2 years or 3 to 6 months) specialist skills. Project Managers would be contracted from the private sector to assist in the development of projects or to supervise the implementation of turnkey projects. Donors will be approached to attach TAs to the Unit. It was stated that the concept of borrowing personnel from various ministries was fraught with difficulties. The personnel were often not available when required and there were problems with the payment of salaries. It is necessary to recognize the importance of individual champions within small systems. As such it will be necessary to introduce remuneration strategies that ensure manpower stability over the 5 to 6 year period.
35. Figure 3 below depicts the proposed project implementation strategy. While the PDU would be the Executing Agency, the process of project implementation should be flexible enough to allow for a variety of mechanisms. For instance:

- where a line ministry authority (e.g. Cook Islands Airport Authority (CIAA) or Ministry of Works (MOW)) has the technical and managerial capacity, they would be appointed as Implementing Agency for the project;
- if the relevant line ministry does not have the capacity to successfully implement a project, another statutory authority or ministry could take on the role of implementing agency (e.g. CIIC or MOW);
- the Unit itself will at times take on the role of Implementing Agency utilising its own fulltime staff or staff specifically contracted from the private sector.

36. Whichever arrangement, or combination thereof, is chosen it is expected that the Implementing Agencies will need to supplement their capacity by engaging consultants to undertake project management, feasibility studies, engineering designs and cost estimates, tender document preparation, tender evaluation and construction supervision.

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**Figure 3: Proposed Project Implementation Strategy**

![Diagram of project implementation strategy]

- **Cabinet**
- **PCC**
- **AMD**
- **PDU**
- **CIIC**
- **Te Aponga Uira (TAU)**
- **Cook Islands Port Authority (CIPA)**
- **CIAA**
- **MOW**
- **Office of the Minister of Island Administration (OMIA)**
- **OPM**

**Notes:**

1 All SOEs must report to CIIC. CIIC, itself, is also an Implementing Agency.
C. Management and Maintenance of Outer Islands Infrastructure

37. The devolution reform of 1996 saw the responsibility for the management, operation and maintenance of all island infrastructure pass into the hands of Island Administrations. A lack of technical capacity, funding and regular maintenance has resulted in deteriorating OI services.

38. The Office of the Minister of Island Administration (OMIA), or more correctly, its predecessor the Ministry for Outer Islands Development (MOID), was established to facilitate the devolution process from the central government to the OIs. It was also intended to provide support and advice to the Island Councils and Island Administrations on governance, financial management and infrastructure development and operations and maintenance.

39. While OMIA has continued to provide the former services, its lack of technical skills has resulted in it no longer being directly involved in infrastructure, other than the overhauling of electrical generators (at its workshop situated in MOW) and the contracting out of the repairs of heavy machinery. MOW and Te Aponga Uira (TAU) have provided technical assistance to the OIs but neither has the resources or budget to officially provide these services and they provide them only an “if able to” basis at present. This is not a satisfactory situation and reports from the OIs reflect this dissatisfaction wrongly laying the blame for slow response on OMIA. On the other hand however, IAs are unanimous in their praise and continued need for the corporate assistance and support provided by OMIA. This is stated to be of particular importance in the areas of corporate planning, communications, financial planning (budgets), monitoring, analysis and reporting.

40. Maintaining the status quo will institutionalize the current constraints and will do little to improve the situation. An option for improvement would be to increase technical expertise within OMIA giving additional capacity to deliver the support services needed by the IAs to operate and maintain their mechanical, energy, water, sanitation, roads and harbor assets. Given Government’s limited technical capacity, this option would only be viable if funding was provided to hire additional technical staff.

41. Another option is to attempt to improve the utilization of government’s scarce technical resources by providing central support to the IAs using the existing resources in MOW and TAU on a fee-for-service basis. MOW would be responsible for supporting IAs with planning, construction, operations and maintenance for water, sanitation, solid waste, roads and mechanical services. TAU would provide similar services for energy. MOW and TAU may find it necessary to contract out the provision of some of the services to the private sector where feasible. This option would mean that OMIA would no longer need technical staff thereby allowing it to focus on administrative, financial and legal support to the Island Councils (ICs) and IAs. ICs and IAs would develop budgets for infrastructure-related activities in consultation with the respective technical agencies.

42. IAs could deal directly with the assigned liaison staff in each of the technical agencies. However this would be inefficient and a further duplication of scarce resources. A preferred option for IA - technical agency liaison would be to have OMIA act as the expeditor and point of contact between the OIs and the technical agencies. This option would be in keeping with OMIA’s successful corporate services role.
43. IAs will remain responsible, with OMIA assistance, for managing their own technical staff. There would need to be agreements made in advance on the expected work required in each island in order to (1) determine the budgets required; and (2) enable the central agencies to plan their OI support programmes. OMIA would coordinate these activities and be initially responsible for the disbursement of the allocated funding. The technical agencies would then be able to organize their staff and financial resources with the knowledge that they would be called upon to provide technical services to OIs and that funding would be available for the provision of these services. The need for additional contracting to the private sector would also be identified.

44. The principle of OIs being responsible, within the constraints of their capacities, for the planning, construction, operation and maintenance of island infrastructure is central to the institutional arrangements recommended above. An ongoing assessment of IA skills and regular capacity building of their technical and administrative staff is therefore paramount. OMIA could, in liaison with IAs, the technical ministries and the Department of National Human Resource Development (DNHRD), undertake skills audits and training needs analysis. The results of these assessments will instruct on-going training of IA Infrastructure staff.

45. While up-skilling courses in Rarotonga and on-island continue to build OI capacity they remain a short-term answer and not a solution to the overall vision of having qualified technical staff on all islands. OMIA will need to liaise with DNHRD and technical agencies to provide OI staff with opportunities to undertake accredited training and gain qualifications. IA and visiting skilled staff also need the tools and facilities with which to operate and provide quality training. Machinery, for example, needs to be protected. The Master Plan includes the provision of tools and refurbishing of existing workshops and the provision of new workshops for islands that do not have such facilities. These resources and facilities would reduce duplication, centralize technical capacity, strengthen management skills, maximize private participation, and through improved efficiency and service quality move closer to a situation where user-pays systems could be introduced for the OIs. The vision is one of an incremental improvement of the OIs ability to develop and manage their planning, budgets, and projects.

D. Private Sector Participation

46. Consultations revealed a widely held belief of both government and civil society that maximizing private sector participation in the construction and operation and maintenance of infrastructure will result in increased efficiencies and improved and more sustainable levels of services. Several levels of increased private sector participation were identified by government and other stakeholders in all sectors. Specific options for increased private sector participation will be discussed in detail in each of the sector reviews where recommendations are made for maximizing efficiencies, lowering costs and improving levels of service.

47. At a very basic level, opportunities exist for the engagement of community groups and small contractors to undertake labor-based government equipment supported (LBGES) activities such as the maintenance of roads, harbors and airfields in the OIs.
Provided Government already has, or contracts in, the supervisory skills, LBGES activities are cost-effective. Government could utilize such processes for smaller construction activities included in the Master Plan.

48. A second level of private sector participation could be the contracting out of services. Incremental contracting out of project preparation and implementation, and the operation and maintenance of infrastructure is supported by all stakeholders. There is, for example, strong support for contracting out to the private sector all heavy machinery maintenance and operations. This could involve a higher level of private sector involvement in which existing government assets are leased out to the private sector. An example of the successful implementation of this strategy is that of the crusher in Rarotonga that was operated by MOW and is now contracted out to the private sector. All stakeholders agree that the efficiency and productivity of the operation has improved as has the quality of the plant's maintenance.

49. Because of its relatively small size, the private sector admits it may not possess the full range of skills and competencies required to carry out all of works contained in the Master Plan. However the private sector argues that preference should be given to locally owned companies who have the capacity to leverage the required skills and expertise through partnerships with overseas companies. The institutionalizing of such a preferential system should be undertaken in full cognizance of the inevitable initial increase to project costs. The benefits however of such a strategy will be the development of capacity and the increased capability of the local contracting and consulting industry which will, in time, bring its own efficiencies and economies.

50. Small contractors state that many of them do not have the documentation skills necessary for engaging in the bidding processes. It is recommended that government, in conjunction with the private sector and the Chamber of Commerce, develop and provide specific training opportunities to assist contractors to participate in the Master Plan implementation process.

51. Another level of private sector participation is that of public-private partnerships (PPPs). Potential future opportunities for PPP involve the development and operation of an environmental and clinical laboratory facility, and operation and management of international harbors and airports. The improved organizational and service efficiencies resulting from PPP arrangements with Maritime Cook Island Ltd is the model for such future enterprises.

52. The highest and most controversial level of private sector participation involves the outright sale of government assets and activities to the private sector. There is widespread concern within the community that such practices could, with regard to essential services, lead to unacceptable monopolies and unacceptable increases in pricing. Landowners argue that land granted to government for the provision of public services should not be sold to individuals or companies for personal profit. Contrary arguments include the entrenchment of safeguards for consumers through, for example, the establishment of arbitration tribunals, service quality standards and price monitoring. This report does not recommend the full privatization of any government infrastructure assets.

53. The private sector believes that greater participation on their part will require Government to develop a more attractive and transparent operating environment with
commercially attractive and consistent Government policy. There must also be reduced Government interventions and crowding out of private initiatives as a result of Government agencies providing competing services. Increased private sector investment would require consistency of planning, programming and funding on the part of the Government and donor agencies, and longer-term supply and maintenance contracts.

54. Building on the successful private sector consultations carried out during this TA and the continued interest of the private sector to engage with government, OPM and AMD should organize a workshop/forum with the private sector and its peak bodies to develop strategies to increase participation of the private sector in all aspects of infrastructure maintenance and construction. The workshop/forum should facilitate:

- Development of an understanding by both public and private sectors of each others aspirations, concerns and constraints;
- Taking steps to consolidate and maintain a register of all potential private sector participants (including their capacity and pricing);
- Development of mechanisms for regular, transparent and wide-reaching dissemination of opportunities for private sector participation.

E. Legislation and Regulations

55. Outdated and inappropriate legislation and the inability for new legislation and regulations to be developed and approved in a timely fashion are important cross-sector constraints identified by stakeholders.

56. Much of the Cook Islands Act 1915 (a code for the colonial administration of the Islands by the government of New Zealand) remains in force today. This Act established a High Court and a Native Land Court and declared that the laws of New Zealand applied in the Cook Islands except where inconsistent with the Cook Islands Act 1915.

57. At self-government in 1965, a written Constitution was enacted preserving existing laws but declaring that no further enactments of New Zealand would have any effect in the Cook Islands without specific application by the Cook Islands Legislative Assembly. In the early years of self-government, the Cook Islands Legislative Assembly enacted an annual "New Zealand Laws Act" which simply contained a Schedule of the short titles to the New Zealand amending enactments. While providing an effective methodology for keeping up with changes to New Zealand enactments which applied in the Cook Islands, this strategy deprived the Legislative Assembly of any opportunity to debate the amendments. This shortcut arrangement was abandoned in the 1970s but the logistics of keeping up with required amendments has proved too great for both legal draftspersons and the legislature. Many Acts from New Zealand continue to apply in the Cook Islands without the advantage of recent amendments.

58. Today the Cook Islands Parliament is the sole law-making authority for the Cook Islands although New Zealand continues to be a major source of reference for new enactments. Increasingly, CI legislators and draftspersons have looked further afield for policies and precedents considered to be more applicable to Cook Islands conditions.
59. One of the core functions of Crown Law is the drafting of legislation. The following is the official process for all proposed new legislation, amendments and deletions to existing legislation, regulations and codes:

(i) ongoing consultations take place with appropriate Minister;
(ii) stakeholders meeting to discuss concerns regarding legislation;
(iii) once all concerns of stakeholders are captured, drafting instructions are prepared:
(iv) either private sector legislation draftspersons including local or overseas TA or Crown Law prepare the first draft;
(v) the first draft is circulated to stakeholders for comments;
(vi) comments are incorporated and re-presented to a workshop of stakeholders;
(vii) upon consensus, the draft Bill is sent to Crown Law for final preparation;
(viii) a Cabinet Submission is prepared and circulated with the Bill to Ministries and agencies affected by the Bill;
(ix) if further changes are required, the process of stakeholder consultation and redrafting is repeated with incorporated changes;
(x) on acceptance, the relevant Minister tables the Bill at Cabinet. If approved the Bill is sent to the Clerk of Parliament for tabling in Parliament;
(xi) if Cabinet raises concerns then the process of stakeholder consultation and redrafting is repeated, with changes, and resubmitted to Cabinet.

60. Several important issues contribute to the current difficulties in developing and approving new legislation and regulations. There is a critical shortage of legislative drafting skills both within Crown Law and in government. Most recent drafting has been undertaken by overseas experts who are characterized, fairly or unfairly, as not being familiar with, or having sensitivity to, local ways and conditions. Many of the pieces of draft legislation are therefore seen as being imported from other countries and, lacking local input which would sufficiently adapt them to local needs. As a result, many drafts remain unapproved for long periods of time initially being passed from one agency to another for comment and finally sitting on the shelf to gather dust.

61. While there is some legitimacy to the preceding claims it is probably the process of drafting legislation and regulations that contributes mostly to the current situation. TA consultants are contracted for limited periods of time and consult and, as far as possible, work closely with, stakeholders to try to ensure that the draft legislation and regulations meet needs and are appropriate to local conditions. However, limited time and a lack of wide-ranging and timely local comment results in drafts that are usually not fully digested until after the consultant has left. For example, three TA consultants have worked on the legislation and regulations for the CI water and sanitation sector and, to date, there is no cross-ministry buy-in or ownership and no adoption of the new laws. However, as stated later in this section, this may prove to be fortuitous in the long run.

62. TA contracts for the development of legislation and regulations should take the realities of local participation into consideration and allow for sufficient time between the development of drafts and re-drafts for the inevitable slow response from stakeholders.
F. Land

63. Land issues are central to all infrastructure sectors and are identified by government as potentially the most costly constraint. The leases on land on which several government buildings stand are shortly to expire and government reports that landowners have advised that they will not be extended. Improvements and extensions of roads, airports and harbors will be dependent on government reaching mutually agreeable arrangements with landowners. All water sources and reticulated power and water networks are on privately owned land.

64. All land is customary or native land and the Land Court and the Leases Approval Tribunal of the Ministry of Justice and Land Court are the sole adjudicators of any and all acquisition (i.e. establishment of new title or transfer of an existing lease) and resettlement. Custom law and traditional land tenure instruct the formal system on all islands except on Mangaia, Mitiaro and Pukapuka. On these islands, the Land Court has no jurisdiction and all authority lies with the traditional chiefs (also known as Ariki).


66. All land on Rarotonga, Aitutaki, Atiu, and Mauke has been surveyed. The land on Penrhyn and Manihiki has not been surveyed and therefore customary negotiations and proceedings have to be followed prior to seeking endorsement and approval of the formal system.

67. The Land Court maintains a register of landowners for all surveyed land. Succession of surveyed and registered land from deceased landowners needs to be registered with the Land Court. The Land Registers are not always up-to-date.

68. The Survey and Land Information Service (SLIS) of MOW maintains a Land Register of Cadastral Boundaries. There is no legislation dealing with surveys and the New Zealand system is followed. There are no formal links between the Land Register held at the Land Court and the Land Register of Cadastral Boundaries. There were, until recently, no plans to harmonize the data from the two registers. It was recently reported that staff of CIIC are planning such a harmonization exercise. This activity must be supported. Authenticated copies of cadastral maps from SLIS are essential for the initiation of land dealings of surveyed and registered land. The SLIS does not conduct any surveys. All surveys are prepared by private surveyors.

69. The Crown has the right to ‘expropriate’ land by warrant either in perpetuity or for a limited period. The use of this process is anathema to the current custodians of traditional land. The process is however legal though politically not palatable.

70. The accepted process is for negotiation to be undertaken with landowners (the process is made easier if the land is registered and the Registers are up-to-date) or with customary chiefs, leaders and the community in cases where land is not surveyed and registered.
71. Negotiations will include the pacing and marking out of land followed by a detailed survey and a social and economic study identifying all landowners and those with ownership and land usage rights. Agreements to lease are documented and include agreed lease payments for the land and compensation for loss of assets such as houses and production benefits. New surveys are registered with SLIS and included in the Land Register of Cadastral Boundaries.

72. The difficulties, costs and time associated with land acquisition and permission for usage should not be underestimated. As noted earlier, MOW, Ministry of Transport (MOT) and TAU highlighted land issues as a crucial constraint to the development of roads, water, sewage, airports and power transmission. The Ministry of Justice noted that land disputes outnumber all other categories of cases before the courts. Prior and timely identification of land requirements is an essential starting point. Careful planning, well conducted social and economic surveys and broad-based culturally sensitive consultations such as those required for ADB funded projects will contribute to successful outcomes.

G. Municipal Services

73. The protection of water resources (a term used here to include lagoon, surface and ground water) is perhaps the most important economic and social issue facing the Cook Islands. The importance of this sector is highlighted by the results of the application of the project ranking instrument described in previous volumes. Two independent applications\(^1\) of the instrument to all projects in the Master Plan ranked projects dealing with water, sanitation and solid waste across the country amongst the highest priority.

74. The situation today has been likened to sitting on a time bomb with disastrous consequences that could drive the country into economic and social regression. Yet the sector is the most fragmented, is supply-driven and lacks coherent policies, strategies, legislation, regulation and monitoring.

75. Under existing legislation, three government agencies share the major responsibilities for water, sanitation and solid waste (hereafter referred to as the water resources sector). The review undertaken during ADB TA 4273-COO\(^2\) identified fragmented institutional arrangements that lacked coordination between the three government agencies involved. The fragmentation results in ineffective management regimes and no clear ownership of policies and planning or regulation at the national level. The lack of ownership and failure to take responsibility is borne out by the failure of government institutions to act on the recommendations of a number of recent studies, legislation and regulations. The fragmentation of responsibility and lack of coordination between ministries of limited capacity are major institutional constraints to the development of policies and strategic plans, the effective operations and maintenance (O&M) of assets, and the monitoring and enforcement of standards. The consequence is

\(^1\) Once by the TA team and once again by a focus group comprising of senior government, civil society and private sector representatives.

a poor quality service evidenced by the reticulation of non-potable water and uncontrolled pollution of lagoons and water tables.

76. Public Health and, more recently, the private sector has shown some leadership but without coordination between the ministries there is doubt about the long-term effectiveness of the strategies proposed between them. Without effective and coordinated management it is difficult to formulate a sustainable development plan. Some options for going forward are outlined below. However there are two important prerequisites for genuine progress in the sector. The first is the already stated requirement for government to urgently develop a realistic NEDS. The second is for government to develop strategies to ensure that all government stakeholders take ownership, reduce fragmentation, and display a willingness to take responsibility for the development and implementation of a national water resources strategy.

77. Considering that the same three government agencies share the major responsibilities for water, sanitation and solid waste, the following summary of the current status of policy and regulation for the sector clearly illustrates the fragmented state of the sector.

- MOW and IAs have responsibility for the operation and maintenance of water supply systems and there is no national policy or regulations. Three supply driven committees were recently formed as a result of a regional initiative and none of these is functioning. Draft legislation recommends the establishment of a Water Board;
- Despite the inputs of several TAs there is no accepted sanitation policy or regulations and there is ongoing conjecture as to which government institution should take on responsibility. Draft regulations recommend a Sanitation Board.

78. Solid waste policy and regulations are in limbo having been passed on to the National Environment Service (NES) more than 12 months ago. There are plans to form a permanent Solid Waste Committee based on the group formed to monitor the recent ADB Waste Management Project.

79. The current state of disarray in the sector could, in fact, be seen as fortuitous if one considers that if the proposals under consideration were, or had been, implemented they may further contribute to the ongoing fragmentation.

80. The following options are suggestions for the future:

(i) continue with the status quo and cease policy and regulatory work in the sector until such time as a NEDS is approved;
(ii) on completion of the NEDS, undertake a comprehensive sector-wide review with a view to developing consolidated policy and regulations, reducing duplication, consolidating capacity and incorporating international experience;
(iii) maintain the status quo and move quickly towards the approval and implementation of existing draft policy and regulations. MOW would maintain responsibility for water and solid waste and the Ministry of Health
(MOH) for sanitation. NES would maintain its current responsibilities. This would, however, institutionalize the fragmentation and offers little hope for improvement. The medium to long-term effect of following such an option could be disastrous for the environment, economy and standards of living.

(iv) transfer responsibility for sanitation to MOW but continue to maintain responsibility for water, sanitation and solid waste under different divisions i.e. Waterworks Division, a new Sanitation Division, and the Waste Management and Recycling Unit. This strategy could begin to address some of the fragmentation issues but would involve duplication and, as experience has shown, even sections within the same ministries do not always work in close cooperation. Under this option, MOH would set guidelines and standards which NES would police.

81. The first option provides, in the opinion of this TA, the most potential for addressing the issues faced by the sector. However, making firm institutional recommendations at this time is highly contentious and beyond the scope of this TA. Government needs to develop its NEDS and takes firm measures to build consensus between stakeholders. Government stakeholders must take ownership and display a willingness to undertake responsibility and reduce fragmentation. Until such time as these conditions are met there seems little benefit in commissioning more studies and little hope of formulating, adopting and implementing a national policy for the management of water resources.

H. Monitoring Water Resources

82. As stated above, effective care and management of water resources is critical for the economic and social wellbeing of the Cook Islands. Tourism, the major economic activity in the country, is dependent on the health of lagoons. Rarotonga's reticulated water supply is completely dependent on the streams that flow to the coast from the central volcanic highlands. Apart from rainwater collected in household and community tanks, ground water lenses are the only source of water in all of the islands in the southern group including Aitutaki. The islands of the northern group depend solely on rain water collected in household and community tanks. The technical aspects of water quality are discussed in Volume Two of this TA. This volume will deal specifically with the institutional aspects of the monitoring of water quality.

83. Water resource quality in the Cook Islands is affected by human habitation (septic tanks, sewage treatment systems, refuse dumps and landfills), and agricultural, livestock and industrial activities. The latter activity is the least important in the Cook Islands. The ministries of Agriculture, Works, Marine Resources, Health and the National Environment Service are, or at least should be, involved to some extent in the monitoring of water resources. There is however no consistent monitoring regime and institutional arrangements for the monitoring of water resources are fragmented and lack co-ordination.

84. MOH undertakes some sampling and testing of water. However the programme lacks funding and is not consistent. Traditionally the MOH clinical laboratory in Rarotonga hospital has provided the most reliable and accurate analytical services to the
water and sanitation sectors. The laboratory is well equipped and staffed by technically competent personnel. The laboratory flies in technical experts from New Zealand to maintain and service equipment. However the laboratory lacks both the funding and the capacity to continue to provide the extensive and regular service required for a comprehensive monitoring regime.

85. MOW and NES conduct some sampling and testing but due to limited resources have not established rigorous or consistent regimes. The testing equipment currently being used by MOW and NES is of sufficient accuracy to identify major variations in the field caused by spills or contamination incidence. However the equipment is unsuitable for providing the consistent and accurate data required for an ongoing monitoring system. The technical staff of MOW reported wide variations between analytical results carried out on samples using their own field testing equipment and those obtained by the sophisticated MOH laboratory. The Ministry of Agriculture (MOA) is currently not conducting any monitoring.

86. The Ministry of Marine Resources (MMR) has the only consistent monitoring programme in the Cook Islands. MMR has for the last three years obtained and tested samples from the tourism centers of Rarotonga (14 marine and 8 stream sites) and Aitutaki (15 marine and 4 stream sites) and the pearl production centers of Manihiki (6 marine sites), Rakahanga (2 marine sites) and Penrhyn (4 marine sites). The testing programme was established with assistance from the New Zealand Aid Agency for International Development (NZAID). The National Institute for Water and Atmospheric Research (NIWA), a highly respected research organization and New Zealand’s leading provider of environmental research and consulting services, was retained to provide technical services and training.

87. MMR has two basic laboratories in Rarotonga; one to undertake biological testing and the other to prepare samples for air freighting to the NIWA laboratories. Equipment and chemical reagents were initially purchased with the assistance of NZAID. Consumables are purchased through MMR’s recurrent budget. Samples are taken on a regular schedule and tests conducted for a limited number of key indices. These tests provide an indication of general water quality and further tests are undertaken if abnormalities are recorded.

88. MMR did own and operate field testing equipment, similar to equipment used by MOW and NES, but reported limited accuracy when compared with analysis conducted on the same samples by NIWA. The current NZAID-funded programme at MMR is aimed at developing MMR’s capacity to undertake future testing and includes capacity building and the purchase of sophisticated equipment for the measuring of suspended solids and chlorophyll. This equipment is still being calibrated in New Zealand. As with the MOH laboratory, MMR will need to have substantial operations and maintenance (O&M) budgets including funds to cover the cost of bringing qualified technicians in from New Zealand to service and maintain this new equipment.

89. Two major issues need to be addressed. The first requires the establishment of a coordinated monitoring regime. Given the limitations of capacity and resources, all stakeholders will need to commit to, and participate in, such a regime undertaking allocated sampling activities, pooling data and establishing a single data base.

90. Volume Two addresses the technical requirements of such a coordinated
monitoring regime and Table 1 below briefly outlines what such a system would look like for Rarotonga showing possible locations for regular testing and responsible agencies.

<table>
<thead>
<tr>
<th>Location for Regular Testing</th>
<th>Responsible Agency</th>
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</thead>
<tbody>
<tr>
<td>Hinterland above reticulation headwaters</td>
<td>NES</td>
</tr>
<tr>
<td>Water intakes</td>
<td>MOW</td>
</tr>
<tr>
<td>Land and ground water in agricultural areas</td>
<td>MOA</td>
</tr>
<tr>
<td>Water in reticulation system</td>
<td>MOW</td>
</tr>
<tr>
<td>Land and ground water in residential areas</td>
<td>MOH/NES</td>
</tr>
<tr>
<td>Reticulated water to consumers</td>
<td>MOW</td>
</tr>
<tr>
<td>Land and ground water below landfill and septage</td>
<td>NES</td>
</tr>
<tr>
<td>Lagoons</td>
<td>MMR</td>
</tr>
</tbody>
</table>

91. The second and more difficult issue is establishing and ensuring funding of the cost of analysis. As noted above, the purchase of necessary equipment and the operation and maintenance of a testing facility needs substantial and ongoing funding. A recent study into the feasibility of establishing an in-country laboratory for the testing of environmental samples was funded by NZAID.

92. Four alternatives present themselves. The first is to increase the capacity of the existing MOH laboratory and convert it into a fee-for-service instrumentality. On-going funding would need to be allocated to undertake a sustainable monitoring regime. The services of such an expanded facility could be extended to both the medical and environmental private sector. There is however a growing resistance by MOH staff to test environmental samples in what is primarily a hospital-based clinical laboratory.

93. A second and preferred option is the establishment of a central testing facility for all environmental testing in conjunction with, and under the management of, the MOH laboratory. Donor funding would be required to equip such an institution and provide the training for staff. The CI government would need to fund the technical staff and the on-going O&M costs.

94. A third alternative would be to have all environmental testing conducted overseas. This would be expensive and, as stated by government, could lead to an unacceptable situation of having no in-country capacity.

95. The fourth option is to establish a central service within one of the government agencies that can undertake a limited range of tests as well as prepare samples for testing overseas. Such an establishment – an expanded version of what is currently operating at MMR – could enter into strategic partnerships with international research institutions to share resources and conduct joint research into environmental issues.

96. All of the alternatives for the establishment of a monitoring system will require guaranteed and on-going government funding. However, given the importance of water resources to the economic and social wellbeing of the Cook Islands, the question is can the government afford not to establish and maintain a monitoring system?
I. The Principle of User Pays or Cost Recovery

97. While people generally accept the principle of paying for electricity and telecommunications, there are historical and cultural constraints in the CI to the charging of fees for municipal services such as water and sewage and solid waste disposal. However, as the projects detailed in the Master Plan illustrate, increased development of infrastructure requires large capital and operational investment. Government must develop strategies for recovery of costs (e.g. interest, charges, depreciation, maintenance, and monitoring). How will this be achieved?

98. Cost recovery is about consumers paying partial or full costs for the services they receive. Its purpose is to generate revenue for future service upgrades and extensions and can be used along with progressive block tariffs to generate subsidies for disadvantaged households. It is also a useful tool for demand management of power or water by penalizing over-users.

99. There are generally two philosophical approaches to cost recovery. The first puts the onus on government to recover all costs through the general tax system and the second is the introduction of user-pay systems. These two approaches are briefly discussed below.

100. There is a case to be argued that for a small population such as the CI, municipal services should be paid for out of general taxation. This would require operating agencies to better understand the nature of their operations and to estimate the full cost of these services. There is little evidence of this in the water, sanitation, and solid waste sectors. It is essential that a full review of the municipal services (water, sanitation and solid waste) for Rarotonga and the OIs includes a cost survey. An understanding of the true costs involved may necessitate changes in the tax regime to ensure full cost recovery of all investments, to cover recurring operational costs and to ensure that the systems are not a drain on the national budget. The downsides of having municipal services met through indirect taxation are: there is no incentive for users to conserve and maintain household installation such as fixing leaking taps; the increased tax burden will be inequitably spread and users will not pay for what they actually use; government’s ability to invest in extensions and improvements is limited; and the system institutionalizes the current culture of waste and the disparities between Rarotonga and the OIs.

101. A user pays system would eliminate cross subsidies and may result in a reduction in general taxes which would compensate for the shift of funding responsibility directly to users. Such a system would be more equitable as users would pay for what they actually use. It would encourage conservation, a sense of ownership of assets, and a greater commitment by consumers to demand management and to maintain and repair in-house installations. The disadvantages of such a system would be the perceived increase in household expenditure as a proportion of net incomes and the potential increased cost burden on low income earners. It is essential that the broad social safety nets currently in place are not dropped in the name of fiscal responsibility.
102. Options for cost recovery within each of the municipal sectors are discussed in each of the relevant sections below.

V. SECTOR ANALYSIS

103. This section presents a detailed analysis for each sector. Existing policy, legislation and regulation have been assessed, business and action plans have been evaluated and the responsibilities and performance of participating stakeholders have been reviewed. The analysis identifies institutional constraints, discusses alternative strategies for addressing these constraints and, where appropriate, makes specific recommendations for improved sector efficiency and service delivery.

J. Air Transport

1. Introduction

104. Several agencies are involved in the air sector. Figure 4 illustrates current institutional arrangements for the sector. The Ministry of Transport coordinates the audit of civil aviation safety and security with assistance from the Civil Aviation Authority of NZ (CAANZ). The Cook Islands Airport Authority (CIAA) operates and manages the Rarotonga and Aitutaki airports on behalf of the Cook Islands Investment Corporation (CIIC), the owner of all Crown assets. Other Islands Administrations (IAs) operate and maintain the airports on their respective islands. There are several different licensing arrangements for Outer Island (OI) airports. Some are licensed to the Island Council (e.g. Mauke), others are licensed to local customary leadership or landowner trusts (e.g. Atiu, Mangaia) and others are unlicensed private airstrips on private land. Air New Zealand and Pacific Blue provide scheduled international services and Air Rarotonga is the sole domestic airline.

Figure 4: Current Institutional Arrangements for Air Transport
2. Assessment

a. Policy and Planning

105. MOT is, in consultation with stakeholders, responsible for the development of policy and the provision of planning services for the transport sector as a whole. The Ministry reports that several aspects of the nation’s overall air transport policy, particularly those aspects relating to the provision of services to the OIs, are in urgent need of review. However the Ministry and stakeholders agree that an overall review of all aspects of transport is required. Piecemeal action would be inefficient and would fail to address the future transport needs of the nation.

106. MOT, like other ministries, is subject to unplanned and unexpected directives from Government. The recent Cabinet decision directing CIAA to take over responsibilities for all other airports is such an example. The intention is to improve air transport services to the OIs. There are, however, no financial arrangements and regulatory frameworks in place for implementation of the decision. This issue is further discussed below.

b. Legislation and Regulations

107. MOT has no formal legislation but provides a scope of services under the Air Services Licensing Act 1984, The Department of Civil Aviation Act 1986/87, the Civil Aviation Act 2002 and the Civil Aviations Regulations for implementing the Act.

108. The Cook Islands Airport Authority was established under the Airport Authority Act 1985. The core function of the Airport Authority is the management of Rarotonga and Aitutaki airports. Under elements of the Civil Aviation Act 2002 and associated Civil Aviations Regulations, the Airports Security Act 1986, and the Aviation Offences Act 1964, CIAA is responsible for airport security, air traffic, fire rescue services, and the maintenance of runways.

109. Some provisions of the older legislation are in conflict with sections of the Civil Aviation Act 2002 and require amendment.

c. Corporate Plans and Performance Indicators

110. Airport standards, maintenance, and operations are regulated under International and adopted New Zealand regulations. The Civil Aviation Authority of NZ audits the international airports of Rarotonga and Aitutaki.

111. Other airports are audited by a CAANZ-trained and licensed local civil engineer. The proposed upgrading of three additional airports to Part 139 under the CAANZ regulations will require the services of additional qualified inspectors and auditors.
112. Table 2 details the institutional outputs of MOT’s civil aviation responsibilities as described in the MOT Strategic and Business Plan. Performance indicators are measurable and reliable data is maintained.

Table 2: MOT’s Civil Aviation Responsibilities and Institutional Outputs

<table>
<thead>
<tr>
<th>Function</th>
<th>Institutional Outputs and Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Coordinate systematic audits of civil aviation: operations; organizations that support aircraft operations; and infrastructure</td>
<td>• Audit reports produced and referred to stakeholders to take corrective action; • Corrective action implemented in financial year.</td>
</tr>
<tr>
<td>• Implement/adopt new legal and safety measures that enhance efficiency of civil aviation</td>
<td>• Stakeholders consulted on new measures; • Assessment of implications to operations and ability to comply; • Implementation / adoption during financial year</td>
</tr>
<tr>
<td>• Coordinate bilateral, regional and international initiatives that have bearing on Cook Island civil aviation.</td>
<td>• Report process on coordination, extent of consultation and outcomes;</td>
</tr>
<tr>
<td>• Monitor and inform stakeholders of critical issues affecting the regularity and efficiency of civil aviation</td>
<td>• Report of survey of stakeholders’ satisfaction with information dissemination.</td>
</tr>
<tr>
<td>• Financial reporting as required under MFEM Act</td>
<td>• Monthly Ministerial briefings</td>
</tr>
</tbody>
</table>

d. Private Sector Involvement

113. Air New Zealand and Pacific Blue provide scheduled international services and Air Rarotonga is the sole domestic airline. Markets are not closed and the present monopoly situations are a function of market size and not a result of regulation. Small populations, large distances, restricted runways, and high capital and fuel costs serve to reduce the possibility of competitive efficiencies, particularly in the domestic market. External regulatory practices, beyond the control of the CIs, provide disincentives for the participation of other regional and international carriers.

114. CIAA and IAs utilize private sector and community-based contractors for grass cutting and drainage maintenance. Retail outlets in Rarotonga and Aitutaki are operated by the private sector. CIAA corporate intent is that of a private sector enterprise. The potential for further gains in efficiency through greater private sector participation in the
operation, management and maintenance of Rarotonga and Aitutaki airports would need to be the subject of a review.

e. Financing

115. CIAA operates and manages the Rarotonga and Aitutaki airports as a financially self-sustaining corporate entity on behalf of the CIIC, (the owner of all Crown assets).

116. IAs operate and maintain the airports on their respective islands. None of these airports is commercially viable and government accepts the cost of their maintenance and operation as a social obligation. Currently, maintenance for each OI airport is funded through non-specific items in the respective IAs budgets.

117. The Island Councils, local customary leadership or landowner trusts that hold the licenses for airstrips, receive the landing fees collected from regular and charter flights to the OIs.

118. The recent Cabinet decision to authorize CIAA to take over all other airports was not accompanied by any framework under which new arrangements will be implemented. The main concern of CIAA is the availability/source of funding for their proposed new responsibilities. Other concerns include the issues of land ownership and insurance. Land ownership issues will be discussed below. These airports are currently not insured but would have to be if they came under CIAA. The question of who would take the risk and who would pay for the insurance remains unanswered.

119. As owner of all Crown assets, the CIIC controls and manages CIAA. The CIAA reports annually to the Board of CIIC on the management and status of assets. Lease arrangements would need to be in place before CIAA takes on responsibility for other airports.

120. Proposals to upgrade Penrhyn, Manihiki and Atiu airports will pose challenges. CIAA was able to fund the upgrading of the revenue-rich Aitutaki airport from within its own finances. However CIAA will not be able to fund the upgrading of the other three airports nor their ongoing operational and maintenance costs. A more in-depth consideration of the alternatives available is discussed below.

3. Consideration of Alternatives

121. The main issues facing the sector are: the proposed upgrade of the Penrhyn, Manihiki and Atiu airports; and the directive by Cabinet for CIAA to take over responsibility for all airports. Three different alternatives have been discussed with stakeholders.
a. Maintain the Status Quo

122. The first option is for Cabinet to be approached to rescind its earlier decision. OI airport licensing would remain with landowners and airport operation and management with IAs.

123. CIAA was established to manage airports that were financially self-sustainable and therefore their responsibilities were restricted to Rarotonga and Aitutaki airports. It is unrealistic to assume that other airports will be financially self-sustaining either in the short or long term.

124. The lack of OI capacity would seriously compromise the ability to manage and maintain the upgraded airports to Part 139 standards. This would compromise their ability to pass audits and diminish the return on investment. Maintaining the status quo is an unacceptable option especially for airports being upgraded to Part 139 as they will, as part of the approval process, need to be licensed to CIAA. This option is therefore not recommended.

b. Immediate Transfer of all Airports to CIAA

125. A second option is for CIAA to immediately take over responsibility for all airports. However, the lack of an acceptable framework for implementation of this option (e.g. operations, maintenance, ownership, licensing, and financial arrangements) makes it impractical. Such a move would encourage unrealistic expectations from landowners, IAs and the traveling public and would, through the resulting financial and resource drain on CIAA, compromise the operations of Rarotonga and Aitutaki airports. This option is therefore not recommended.

c. A Staged Transfer of Responsibility to CIAA

126. The third option is a staged incorporation of airports responsibility to CIAA. This would allow for the development of a framework for the financial arrangements including budgetary allocations, the transfer of funds from IAs to CIAA, revenue sharing and subsidies. A rational program would include the development of a transport policy with training components for staff from MOT, CIAA, IAs and landowners in all aspects of airport operation, management, maintenance and monitoring. Surveys and a public awareness campaign will need to be conducted for all airports beginning with those proposed for upgrading. Once land has been surveyed and marked, the accepted process of land acquisition (identification of owners, negotiations, etc.) can commence with landowners or with customary chiefs. Following are proposed options for: land acquisition and the institutional arrangements for undertaking the upgrading and the financing of the on-going operations and maintenance.
(i) Land Acquisition

127. The upgrading of the Penrhyn, Manihiki and Atiu airports will pose unprecedented, though not insurmountable, challenges. As noted earlier, the land for the original airstrips on each of the islands is utilized under a variety of lease arrangements with customary landowners. Upgrading will require the acquisition of additional land for the extension of the existing strips. Land adjacent to the new strip will not need to be acquired but will be subject to height restrictions (obstruction limitation surfaces). Tall trees, some houses, and objects such as lampposts may need to be removed, and future agricultural activities and housing construction restricted. It is unreasonable and inefficient to expect CIAA, a technical agency, to become involved in the delicate negotiations that will be required to formalize leasing and other land arrangements. All land acquisition and compensation arrangements should be formalized prior to the involvement of CIAA.

128. MOT reports longstanding land issues with customary landowners for most of the OIs airports and expects to face difficult negotiations.

129. The land acquisition process will require the following steps:

- Consultations will need to be undertaken to ensure community awareness, transparency in communication and availability of information, and a thorough understanding of the processes. Of particular importance is the understanding of the two types or land acquisition required, i.e. the additional land for the expanded strips and the surrounding land on which restrictions of tree and building height will be placed;
- Permission to undertake initial surveying is essential;
- Once land has been surveyed and marked, landowners can be identified and documented;
- Negotiations can then commence for lease or grant arrangements for the additional land for the expanded strips;
- Trees, dwellings and other obstructions on restricted land need to be identified and compensation and relocation negotiations need to be undertaken and implemented. Awareness of the requirements for obstruction limitation surfaces will need to be ensured in order to guarantee both an understanding of the need for the restrictions and to prevent future intrusions into the restricted air space. One estimate by a visiting engineer envisaged the removal of a total of approximately 10,000 trees, 6 houses, about 12 lampposts, and the realignment of roads for the three strips. (It is interesting to note that increases in the height of the obstruction limitation surfaces have been granted to some airports in New Zealand to save existing trees.)

130. The Crown has the right to 'expropriate' land by warrant either in perpetuity or for a limited period. The use of this process is anathema to the current custodians of traditional land. However, the process is legal though, politically, not palatable.
(ii) Institutional Arrangements for Upgrade Works

131. Once all land acquisition processes have been completed and documented, upgrading can commence. Alternatives for the institutional arrangements for undertaking the upgrading include:

- The PDU to take on the role of implementing agent and organize contracts (including the engagement of a project engineer for a turnkey project) which, when completed, will be handed over to CIAA.
- PDU, through CIIC, to appoint CIAA as implementing and employing agent. CIAA would develop and administer contracts and provide project management and supervision from either their own staffing resources or by engaging a project engineer to confirm that construction meets design standards.
- CIIC itself to take on the role of implementing and employing agent for a turnkey project which, when completed, will be handed over to CIAA;

(iii) Operation and Management of OI Airports

132. IAs will remain responsible for the maintenance and operation of the airports on their respective islands.

133. CIAA will enter into contractual arrangements with IAs to manage and operate airports that are upgraded to Part 139. Such airports will require a competent airport manager and safety officer and, considering the shortage of skilled persons in the OIs, the Island Secretaries may well have to take on this role. Training and supervision will be provided along with relevant documentation and manuals. The IAs infrastructure staff would also need to be trained in strip maintenance and in appropriate grader and roller operation skills.

134. One suggested alternative is for CIAA to organize training programmes using Aitutaki airport as a training center because of the availability of both sealed and unsealed landing surfaces. Further opportunities for training will be available during the construction phase of the upgrade. Manihiki and Penrhyn will also need people trained in the day-to-day maintenance of existing navigation aids. Current arrangements with Telecom will probably remain in place.

(iv) Ongoing Financial Arrangements

135. Firstly, Government must accept that airports other than Rarotonga and Aitutaki will not, in the short to medium term, be commercially viable and that their operation and maintenance must be seen as part of government’s social responsibility. Annual estimates of all relevant costs will need to be prepared for inclusion in annual budgets. Transparent and realistic funding will need to be made available through annual budgets to those responsible for operating and maintaining the airports.
136. Funding for the upgrades of airports will need to be sourced by Government. If funds need to be borrowed, Government must maintain responsibility for discharging the loan.

137. It is widely believed that even if CIAA takes over these airports, landowners will not relinquish their rights to collect landing fees. Considering the limited number of flights to each of the OI airports, revenue from landing rights cannot be counted on to offset operation and maintenance costs. One alternative for upgraded airports is the charging of a departure fee at Rarotonga to offset some of the operation and maintenance costs. Procedures for collection of such a fee at Rarotonga are available; the introduction of such a fee at the OIs would, however, be administratively inefficient. The application of such a charge would be restricted to those airports that have been upgraded and not to all airports.

4. Recommendations

(i) Immediately commission a transport policy review;

(ii) Undertake appropriate amendments to legislation to ensure complementarities;

(iii) CIAA to take over each of the three airports proposed for upgrading after upgrading has taken place and they are certified to Part 139 and financial and administrative agreements have been reached with Government and IAs;

(iv) Other airports will be taken over only after land leasing and licensing agreements are reached with landowners and financial and administrative arrangements are reached with Government and IAs.

(v) Several of the steps in the processes outlined below are only of relevance to the three airports proposed for Part 139 upgrading. Land, licensing, financial and training issues, however, are relevant to all OI airports. The CI government will, through PDU, undertake a process to ensure:

(a) awareness is secured through consultations with landowners;
(b) a survey is undertaken of each of the airports and their environs;
(c) lease and restricted land requirements are identified and marked;
(d) ownership is established and negotiations undertaken to finalize leasing, compensation, relocation, licensing, insurance and revenue sharing arrangements.

(vi) The implementing and employing agent appointed by PDU to undertake an airport upgrade will utilize its own capacity or engage consultants to:

(a) prepare tender documents, and undertake tender evaluation and selection;
(b) undertake contract administration, construction supervision, commissioning and inspection prior to the lapse of the defects liability period.

(vii) PDU will make institutional arrangements between MOT, CIAA and IAs to:

(a) develop an Operations Manual;
(b) train IA staff as airport managers and safety officers;
(c) train IA infrastructure section staff to maintain airstrips;
(d) ensure development of annual O&M budgets, with the assistance of CIAA, and ensure budget allocations for additional operational costs and maintenance of assets, such as fire fighting and rescue vehicles.
(e) MOT will undertake the training of local inspectors for Part 139 certification.

K. Marine Transport

1. Introduction

138. Several agencies are involved in the marine transport sector. Figure 5 illustrates the current institutional arrangements for the sector. The Ministry of Transport is responsible for shipping licences, maritime safety and security and the regulation of freight rates. The Cook Islands Ports Authority (CIPA) operates the Avatiu (Rarotonga) and Aitutaki Ports on behalf of the Cook Islands Investment Corporation (CIIC), (the owner of all Crown assets). IAs operate OI harbors and port facilities on their respective islands. Private sector organizations own and operate vessels for domestic and international cargo and passenger shipping, fishing, local and domestic tourist operations, research and pleasure. Maritime Cook Islands Ltd manages the shipping register under a management agreement with MOT.
2. Assessment

a. Policy and Planning

139. MOT is, in consultation with stakeholders, responsible for the development of policy and planning for the transport sector as a whole, including Marine Transport. Overall transport policy is in urgent need of review, particularly in relation to the provision of services to the OIs.

140. MOT advises Government on the development of policy relating to the licensing of international and domestic shipping operators and for maritime safety and security. The Ministry also provides the executive services for a tribunal that arbitrates and advises on the appropriate levels for freight rates.

141. The Maritime Training Center of MOT is responsible for developing and presenting maritime training programmes, including boat-master and sea-safety training.

b. Legislation and Regulations

142. The Shipping Act (as amended in 1998) and associated regulations and ordinances including the Shipping Licensing Ordinance 1963 and the Prevention of
Marine Pollution Act 1998 provide authority for the primary functions of MOT. The Admiralty Act (2004) makes provisions for, and outlines the extent of, the admiralty jurisdiction of the High Court of the Cook Islands.

c. Corporate Plans and Performance Indicators

143. MOT has adopted the Maritime standards specified under the International Maritime Organization’s (IMO) code of practice. The Ministry enforces them by leveraging the resources of the Secretariat of the Pacific Community (SPC), Maritime New Zealand and the IMO and by adopting systems that have been tested by these organizations.

144. MOT monitors safety and security through a cycle of annual audits, the provision of information, and the application of legal measures to ensure adherence. However, the onus of compliance is placed on transport providers “to regulate their own performance, by our setting standards and their promise that they will perform and comply to these standards.” Maritime Cook Islands Ltd reports that surveys of some domestic cargo vessels continually identify maintenance requirements. These vessels are however given dispensations to operate because they are the only service to the OIs.

145. Table 3 details the institutional outputs of the Ministry’s maritime responsibilities as described in the MOT Strategic and Business Plan.

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3 Strategy and Business Plan. Cook Island Ministry of Transport
4 Consultations with Maritime Cook Islands Ltd
Table 3: MOT’s Maritime Responsibilities and Institutional Outputs

<table>
<thead>
<tr>
<th>Function</th>
<th>Institutional Outputs and Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Monitoring and facilitating the orderly administration of the Shipping Register</td>
<td>• Effectively managed by Maritime Cook Islands Ltd under a management agreement with MOT</td>
</tr>
<tr>
<td>• Implementing legislative and policy measures that safeguard maritime transport</td>
<td>• The need for a transport strategic plan</td>
</tr>
<tr>
<td>• Adopt and enforce IMO and regional safety standards</td>
<td>• Key challenge is to continue to maintain standards under global transport regimes that demand increased levels of compliance</td>
</tr>
<tr>
<td>• Facilitate international, regional and bilateral endeavors in the maritime area</td>
<td>• As above</td>
</tr>
<tr>
<td>• Financial reporting as required under MFEM Act</td>
<td>• All financial reports produced in timely fashion</td>
</tr>
<tr>
<td>• Monitor and improve internal management</td>
<td>• Well-documented monthly meetings but capacity constrains effective strategic planning and policy review.</td>
</tr>
<tr>
<td>• Staff training and skills up-grade</td>
<td>• Regular reports produced.</td>
</tr>
</tbody>
</table>

d. Private Sector Involvement

146. Private sector organizations own and operate vessels for domestic and international cargo and passenger shipping, fishing, local and domestic tourist operations, research and pleasure.

147. Reef Shipping (through its local agent Express Cook Islands Agents (ECIL)) and the Pacific Forum Line (PFL) currently provide international shipping services to and from New Zealand to Rarotonga and Aitutaki. Both international providers operate a service approximately every 3 weeks. Major local importers including Foodland, Cook Islands Trading Corporation (CITC), and General Transport are shareholders in ECIL.

148. The Government holds, through CIIC, shares in the Pacific Forum Line. The South Pacific Forum established PFL in 1977 as a commercial shipping company and as an instrument for regional development at a time when existing shipping services to and from the Pacific were losing money and in danger of being curtailed. PFL initially operated under a mix of commercial and developmental principles but was quickly forced to recognize the fatal conflict between these. PFL served its initial purpose of ensuring continued overseas shipping for the Cook Islands. Subsequently however, the presence of government competing with other legitimate private enterprise activities and
the resulting crowding out has come under scrutiny. It is claimed that Government
competition was in some way responsible for the recent demise of one of the private
sector participants in international shipping. PFL currently provides an alternative service
and its absence from the market would result in a monopoly situation.

149. Taio Shipping Ltd operates infrequent services to the OIs with two vessels. Both
vessels are at the end of their useful lives and will need to be replaced within two years.
OI residents rely on Taio Shipping for passenger services because air services are
limited and costly. The vessels lack proper passenger accommodation.

150. Two new players have recently shown interest in the domestic market. The motor
sailer *Kwai* has commenced trading between Honolulu, the northern Group and
Rarotonga. The vessel can carry 200 tonnes of pallet cargo, 8 passengers in cabins and
12-16 foresail passengers. The vessel has plans to include freezer space capable of
carrying 4-5 tonnes of red snapper to a large market in Honolulu on the condition that
blast freezers are available in the northern islands. The master of the locally registered
*Picton Castle* is reported to have purchased two vessels, which are being converted to
schooners for carrying 12 high-end tourists and a similar number of budget passengers.
The vessels will have limited cargo space of around 30 tonnes. It is planned for one of
these vessels to work exclusively in the Cook Islands while the other operates regionally.

151. The viability of commercial domestic shipping is constrained by the fact that
Aitutaki, the largest and most profitable OI destination, is serviced by the international
services.

152. There are 4-5 fishing vessels working small long-line operations out of Avatiu
harbor providing fish for the Rarotonga household and restaurant markets.

153. Pleasure boats include domestic craft used for private purposes and to support
the tourist industry (glass bottom boats, dive boats etc), and international cruise liners
and visiting yachts.

154. Maritime Cook Islands Ltd., a local entity which manages the shipping register
under a management agreement with MOT, is an example of a flourishing PPP which
replaced a struggling government organization.

e. Financing

155. CIPA operates Avatiu (Rarotonga) and Aitutaki harbors as a financially self-
sustaining corporate entity on behalf of the Cook Islands Investment Corporation (CIIC).
CIPA reports that their Aitutaki operations are currently running at a loss and are
subsidized by revenue from the Rarotonga facility. It is not envisaged that CIPA will, in
the life of this plan, take over responsibilities for any of the other ports or harbors.

156. CIPA conducts all longshoreman activities in both of its facilities and reports that
the revenue from these activities is essential for meeting maintenance costs.
Stevedoring at Avatiu is undertaken by a private company.

157. IAs operate and maintain the port and harbor facilities on their respective islands.
None of these facilities is commercially viable and government accepts the cost of their maintenance and operation as a social obligation. Currently, maintenance for each OI harbor is funded through respective IA budgets.

158. Many of the OI facilities were damaged by recent cyclones and are badly in need of upgrading and maintenance. Several projects for their improvement are being proposed in this Master Plan. PDU will need to appoint implementing and employer agencies to take responsibility for these proposed projects as IAs do not have the necessary capacity. The projects will provide opportunities for training of IA infrastructure staff in their operations. CIPA estimates that, on completion, the OI facilities will in general be maintenance-free for several years.

3. Consideration of Alternatives

159. The main institutional issues facing the sector are those involving the possibility of increased private sector participation in the operations for the Avatiu and Aitutaki harbors and the institutional arrangements for the proposed upgrade of OI harbors. Alternatives derived from stakeholder consultations are presented below.

a. Increased Private Sector Participation in Avatiu and Aitutaki Harbors

160. CIPA is responsible for Avatiu and Aitutaki harbors and undertakes all activities except stevedoring, which is performed by the private sector. CIPA’s 15 staff in Rarotonga and 5 full-time and 15 part-time staff in Aitutaki provide all operational, management, administration, longshoremen and security services.

161. One option is for the status quo to remain and for CIPA to continue to maintain, operate and manage all activities for both ports with the private sector continuing to undertake stevedoring activities in Rarotonga. This is CIPA’s preferred option.

162. A second option is for CIPA to continue to operate and maintain the ports and harbor facilities but to contract out or privatize the provision of all stevedoring, longshoremen and security activities in both ports. This is consistent with practice in most ports around the world. This would involve the disposal of all cargo handling assets and the leasing out of warehouses and other container and cargo storage facilities. Private sector capacity and willingness to undertake these activities exists in both locations.

163. A third option would be for the government to retain ownership of the infrastructure of the Avatiu and Aitutaki harbors but have CIIC follow the successful international trend of leasing port operations to the private sector. The private sector view the two ports as standout examples of government assets that will gain from PPP arrangements and claim that private sector involvement and investment in Avatiu and

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5 Allow the private sector to operate longshoreman and stevedoring services to shippers paying a fee to CIPA.
Aitutaki harbors would improve facilities at both ports (both have the potential to provide a regional service).

164. Aitutaki port has the potential to become a major focal point for the international yacht circuit and improved services at Avatiu would increase the desirability of that port as a destination for the more than 900 cruise boats estimated to bypass the port annually. Commercial incentives to leaseholders include development of existing Crown land associated with CIPA to provide commercial facilities and stimulate economic growth.

165. It is not recommended that Government consider sale of the two assets, i.e. the ports. Their sale would reduce the potential number of possible participants and increase the likelihood of non-Cook Island involvement.

b. Institutional Arrangements for Upgrade Works

166. The Master Plan calls for the upgrading and construction of several OI harbors. Neither the CIPA nor the IAs have the capacity to manage the construction of the required works and two options are therefore considered.

167. PDU will be the executing agency for the projects. Land would not be an issue, as the proposed works will be confined to land already in the hands of Government. PDU or CIIC could take on the role of implementing agency and organize contracts, including the engagement of a project engineer for a turnkey project which, when completed, will be handed over to the IA.

168. Careful consideration should be given before considering IAs as implementing agents for even the smallest of the projects. The preferred option for smaller projects would be for PDU, MOW or CIIC to take on the role of implementing agent and contract out the work to the private sector with the proviso that local labor be utilized wherever possible.
4. **Recommendations**

(viii) PDU be the executing agency for the upgrading and commissioning of OI harbors. As such, PDU would be responsible for prioritization and inclusion of projects in works program and the appointment of the implementing agent for each project.

(ix) CIIC to undertake a due diligence study of CIPA to ascertain the true value of activities and assets of the Avatiu and Aitutaki port facilities with a view to:

- contracting longshoreman and security activities to the private sector;
- deliberating the case for leasing the operations and management of the ports to the private sector.

L. **Road Transport**

1. **Introduction**

169. Figure 6 illustrates the current institutional arrangements for the CI road transport sector. Decentralization of infrastructure functions to the OIs has in theory left MOW responsible for the engineering and maintenance services for roads, drains, bridges and foreshores on the island of Rarotonga. The 15 staff of the Roads Work Division of MOW discharged these functions. Rarotonga Island Councils (also known as Vakas) have limited technical and plant capacity and confine their activities to basic roadside maintenance.

170. On the OIs, the Infrastructure Division of each of the respective IAs is responsible for the engineering and maintenance services for roads, drains, bridges and foreshores. OMIA provides a focus for liaison and contact between IAs and the Roads Division of MOW, aid agencies or private contractors. The Police Department has responsibility for driver licensing, regulation and monitoring of traffic and road safety, including the erection of road signs. MOT is responsible for the regulation and registration of vehicle dealers. The Bank of the Cook Islands (BCI) collects vehicle registration fees and issues licence plates on behalf of Government. The private sector’s participation in the road sector is presently limited to the contracting of plant and equipment on Rarotonga, Aitutaki and Mangaia.
2. Assessment

a. Policy, Planning, Legislation and Regulations

171. Government has not published any specific policy for the road sector. Nonetheless the objective of MOW and IAs is the development and maintenance of safe, effective and sustainable roads, bridges and drainage. In the absence of a national road policy, MOW and IAs plan annual roadwork activities on an ongoing needs basis.

172. The core functions of the Ministry of Works (as addressed in the Supportive Services Act (36 of 1973-74)) include engineering and maintenance services covering general operational civil engineering for: roads, drains, bridges and foreshores. (The latter is defined as a 30 meter wide strip of land extending along and abutting the mean high water mark.) Decentralization of infrastructure functions to the OIs has, in theory, left MOW responsible only for roads on the island of Rarotonga.

173. The Rarotonga Island Council: (Empowering Public Works and Services) Ordinance (4 of 1959) empowers the Rarotonga Island Council (RIC) to maintain, improve and control roads and foreshores on the island. However, their limited technical and plant capacity confines their activities to the cutting of grass on verges and some maintenance of drains.

174. There is currently no legislative framework enabling or authorizing IAs to manage and operate their infrastructure. If the draft Island Government Bill and the Ministry of
Islands Development Bill are enacted in their current form, they will confirm the ability of an IA to carry out works and perform its functions by using its own employees or, by arrangement and contract with the Crown, any department of the state, statutory body, enterprise of the crown or any other person or organization. IAs currently function in liaison with OMIA using the provisions of the two Bills as guidelines.

175. Current legislation\(^6\) provides that while road formation, maintenance and repair is the responsibility of the Crown, ownership is vested in adjoining owners, in accordance with common law. The implications of this legislation are discussed below.

b. Corporate Plans and Performance Indicators

176. The absence of a national road plan means that MOW and IAs plans for annual roadwork activities are driven by budget allocation and immediate needs. This is illustrated by the following examples of expected results in The Vision, Strategy and Business Plan 2005/6 of MOW:

- Existing bridges around Rarotonga are maintained according to approved funding.
- Existing drains are maintained according to approved budget.

177. The performance indicators for roadworks in the Business Plan, similar to those in most other business plans, are not all quantifiable, do not have targets, and are not time-specific. The development of a NEDS and subsequent sector policies will enable the Planning Unit of OPM to assist public institutions in the development of business and action plans with indicators, baseline data and targets that would be realistic and capable of providing valid information to an ongoing and effective monitoring and evaluation system.

c. Private Sector Involvement

178. The private sector’s participation in the road sector is presently limited to the contracting of plant and equipment on Rarotonga, Aitutaki and Mangaia. In Rarotonga, the maintenance of rights of way, including vegetation control and drainage, is contracted out.

d. Financing

179. Funding needed by the MOW Road Works Division in 2005-6 is estimated in MOW’s Business Plan as NZ$468,810. The Plan estimates NZ$110,000 to be generated through plant hire and private sealing work carried out by the Road Works Division. The explanation given by MOW for the inclusion of this revenue is that there is no capacity within the private sector to undertake this work. The private sector, on the other hand,

\(^{6}\) Section 608 of the *Cook Islands Act 1915*
argues that Government is crowding out any potential contractors through the provision of low cost services. This issue will be discussed below.

3. Consideration of Alternatives

a. Landowners and Community

180. Section 608 of the Cook Islands Act 1915 states that “although all roads shall be formed, maintained and repaired by the Crown, any road in the Cook Islands shall not vest in the Crown, but shall belong in accordance with common law to the adjoining owners.”

181. In relation to ‘ownership’ of roads, MOW’s advice is that it is their understanding that only the two ring roads around Rarotonga have been acquired by the State. Apart from the small street grid in Avarua, the remaining roads in Rarotonga are short feeder roads which connect to the two ring roads. Most of these are built on the properties of the landowners on either side of the road. This is a problem which is expected to persist indefinitely.

182. Land issues on both Rarotonga and the OIs could prove to be a serious constraint to improving existing roads and constructing new road works. The Chinese funded upgrading of sections of the inner ring road in Rarotonga will provide valuable experience in dealings with landowners and the issues of land acquisition and compensation. MOW is currently working with contractors on the survey of the upgrading. The extent of land acquisition, if any, and the damage to adjoining properties is as yet unclear and the subject of conjecture.

183. Community reaction to widening roads and increasing traffic volume and speed in Rarotonga is unanimously negative. There is a strong commitment to maintaining the ‘country town’ feel of Rarotonga. Rather than widening roads, community consultations unanimously seek the development of footpaths and the introduction of speed bumps.

b. Institutional Arrangements

(i) Rarotonga

184. MOW is, despite budget constraints, and contrary to some public sentiment, doing a creditable job in maintaining roads in Rarotonga.

185. While having excellent ability to undertake the existing maintenance and minor new construction, MOW lacks the capacity to develop plans and strategies for the road sector. All other municipal functions suffer from the same constraint. It is essential that the strategic planning capacity of MOW be developed in order to provide that function for both Rarotonga and the OIs.
186. Incremental private sector participation will demand the strengthening of the capacity of MOW in all aspects of transparent contracting, from contract development through selection and supervision to final commissioning.

187. Road planning and traffic management are becoming increasingly important given the growth in traffic on Rarotonga roads. MOW does not have the capacity to undertake these functions. However, the scope of work is too small for full-time employment so in the short-term this function should be contracted out to a local or overseas consultant.

188. Road safety is increasingly an important issue as traffic levels increase. Rising youth alcohol and substance abuse is a compounding factor. The Department of Police and MOT should coordinate with the Ministry for Education and civil society organizations to mainstream road safety education and awareness at the secondary school level, provide driver training and raise public awareness.

189. Maintaining the status quo and not increasing private sector participation would not contribute to better efficiencies. While not pre-empting the outcomes of the proposed review of the road sector, it is envisioned that MOW would increasingly concentrate on strategic planning for both Rarotonga and contract out all construction and maintenance works to the private sector.

(ii) Aitutaki and the Outer Islands

190. IAs in most of the OIs will continue to be responsible for the maintenance of roads on their respective islands. OMIA should continue to act as a liaison point for OIs, engaging MOW and increasingly the private sector to provide assistance.

191. MOW should continue to assist the OIs with strategic planning, the design of proposed works, and building their capacity to manage and supervise contractors.

192. The private sector on Aitutaki, and increasingly on other islands, has the capacity to undertake contracts for road construction and maintenance. Crushers on Aitutaki and other islands are currently operated by the IAs and are out of action or underperforming. The private sector has shown considerable interest in leasing the crushers. Suitable arrangements should be put in place to enable this to happen.

(iii) Increased Private Sector Participation

193. There are several areas in the road sector that could benefit from increased private sector participation. It is recommended that a cost study be commissioned on all aspects of road construction and maintenance.

194. Plant and equipment is hired from the private sector to undertake major capital road works on Rarotonga. MOW reports that the cost of hiring from the private sector is high compared to the charge-out rates of MOW and IAs. One example provided in Rarotonga was the private sector cost of NZ$160 an hour for the hire of a backhoe
compared to the MOW charge-out rate of NZ$90 an hour. It is doubtful if the current MOW rates are a reflection of the actual cost to government.

195. MOW should decrease their own plant and machinery inventory and increasingly use the private sector to supply its needs. There is support for increased involvement of the private sector in maintaining MOW’s fleet of vehicles with a view to closing down the present workshop. MOW has also investigated the contracting out of planning and design aspects of its roadwork but states that current charge-out rates for these services are high and would initially require increased budget allocations. Elements within MOW believe that private costs would stabilize in a competitive, free market environment.

196. MOW states that the private sector is not sufficiently developed at the moment to provide competitive options for full privatization of road works. It is reported that there is no contractor on the island currently capable of providing the full range of services required. There is, for example, no contractor with a capacity to undertake bituminous works.

197. Private sector, on the other hand, argues that this situation exists because not only does MOW not contract out road maintenance to the private sector but it also crowds out any potential private sector participation by undertaking private road sealing, often at below cost. The private sector believes that, given the opportunity, competent contractors will invest in equipment and staff training and provide what would in the long term be a more efficient and cost-effective alternative to the present situation. Their main concern is, however, the ability of government to plan for funding activities for periods of more than 12 months. Contractors maintain that for such a large investment they would require guarantees (conditional on performance and cost) of funding for a period of between three to five years.

198. Private sector contractors claim that existing relationships with larger companies in New Zealand and Australia allow them to leverage the technical expertise and equipment necessary to undertake any major road contract in the Cook Islands.

199. A few years ago MOW sold to the private sector, at a peppercorn price, a crusher whose operations had been uneconomical and whose associated maintenance costs were high. The contractor who purchased the equipment has maintained and upgraded it and now provides MOW with a reliable and cheaper service for road material.

4. Recommendations

(i) Government to commission a review of the road sector immediately after the development of a NEDS. The review is to include a cost study on all aspects of road construction and maintenance. The outputs of the review should be a national strategy for road development and maintenance and an analysis of the potential areas of increased private sector participation.

(ii) OPM to assist MOW in the development of the national strategy and business and action plans with indicators, baseline data and targets that are realistic and capable of providing valid information.

(iii) CIIC to assist MOW and IAs to implement increased private sector participation recommendations arising from a comprehensive cost study.

(iv) The strategic planning capacity of MOW to be developed in order
to provide that function for both Rarotonga and the OIs.

(v) Strengthen MOW’s and IAs capacity to develop and manage contracts, operational efficiency and financial control.

(vi) The Department of Police and MOT to coordinate with the Ministry for Education and civil society organisations to mainstream road safety education and awareness at the secondary school level, provide driver training, and raise public awareness.

(vii) PDU and MOW to develop Terms of Reference (TORs) and tender documents for the engagement of a consultant to provide MOW with a capacity for road planning and traffic management.

M. Energy

1. Introduction

200. Several agencies are currently involved in the energy sector as illustrated in Figure 7. MOW’s Energy Division (ED) (the former Ministry of Energy) is responsible for development of national energy policy and energy planning and regulates and monitors standards for safety, quality, quantity and efficiency of electricity generation, transmission and distribution, tariff control and the quality of petroleum and other fuels. CIIC, the owner of all Crown assets, oversees the operations of Te Aponga Uira (TAU) and the Aitutaki Power Supply (APS), which operates and manages the Rarotonga and Aitutaki power supplies respectively.

201. IAs are responsible for their respective power generation, distribution, safety and inspection. OMIA operates a workshop that overhauls OI electricity generation equipment and is responsible for indirect subsidies to the OIs in the form of grants that offset the island’s overall budget deficit.

202. The Cook Islands Electrical Workers Registration Board administers regulation and the registration and licensing of electrical workers. Government and private sector are represented on the Board.
2. Assessment

a. Policy and Planning

203. Government adopted a National Energy Policy\(^7\) (NEP) in 2003. The policy is a long-term vision for the nation’s energy sector and is complementary to the National Vision of 2005 and the NSDP. The aim of the NEP is “to facilitate reliable, safe, environmentally acceptable, and cost-effective sustainable energy services for the people of the Cook Islands”. Its guiding principles set goals for sustainability, self-sufficiency, efficient service delivery and financial independence.

204. The policy states that over time, cross-subsidies among electricity users are to be eliminated. Those who receive electricity through renewable energy systems are to pay monthly fees sufficient to meet operating and maintenance costs (including the eventual replacement of the system components). There are broad policies for overall energy planning and management, the power sector, renewable energy, petroleum fuels, transportation, and environmental aspects of energy.

\(^7\) Cook Islands National Energy Policy 2005
b. Legislation and Regulations

205. The *Energy Act 1998* addresses issues of safety standards and licensing. The *Cook Islands Electricity Regulations of 2005* were produced as required under the *Energy Act 1998* but remain in draft and are yet to be formally adopted. However these regulations are used as guidelines to govern the licensing, technical and safety requirements for power generation, distribution and consumer premise wiring. The regulations specify the qualifications and technical skill requirements for the registration and licensing of various grades of electrical workers. This latter function is administered through the Cook Islands Electrical Workers Registration Board on which MOW, TAU and the private sector are represented.

206. TAU is a State-owned enterprise that generates, transmits and distributes electricity to all of Rarotonga Island under the *Te Aponga Uira Act 1991*.

c. Corporate Plans and Performance Indicators

207. The NEP includes a Strategic Plan with specific activities, lead agencies, indicators of success, assumptions and risks, and a time frame for each policy area but no specific budget allocations for implementing any activities or indications of priority among them.

d. Private Sector Involvement

208. Rarotonga’s private sector is well serviced by 25 electricians and 4 electrical mechanics. There is one qualified electrician in each of Aitutaki, Atiu and Manahiki and one electrical mechanic in Aitutaki.

209. TAU contracts the private sector for many of its subsidiary activities, e.g. line and cable laying and overhead obstruction removal. TAU also plans to contract the private sector for additional support services for the major activity of overhauling its generation equipment.

e. Financing

210. The NEP dictates full cost recovery for TAU and OI consumers, while conforming to any loan covenant requirements. The policy requires that cross-subsidies between business and household consumers in Rarotonga and the OIs be eliminated by 2007. In recognition of the service responsibility of government, the policy requires that lifeline tariffs be introduced so as not to disadvantage low-income earners.

211. TAU has not been able to continue operations on a full cost recovery basis.

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8 Cook Islands Electricity Regulations. Draft. 2005
9 National Energy Policy of 2003
however. Despite a recent tariff rise, cross-subsidization of private households by business users remains. TAU management is concerned that continued cross-subsidies could raise business tariffs to a level such that their largest customers may decide that it is more economical to generate their own electricity. Seen in a more positive light, environmentally sound private sector self-generation practices would reduce the demand on TAU and delay the need for major investment in additional generation capacity.

212. IAs operate their own billing systems reading meters, issuing bills and collecting revenue. Current rates range from 36 to 46 NZ cents per unit. This is less than the tariff in Rarotonga which ranges from a minimum of 55 NZ cents per unit to a maximum of 63 NZ cents per unit. It is essential that Government commission a cost recovery study that will provide advice on tariffs on Rarotonga and the OIs as well as review the development of policies relating to transparent OI cost subsidization.

213. None of the OI power operations fully recovers costs. The Aitutaki Power Supply (APS) is the nearest to achieving this target but controls by Government on tariffs for both householders and commercial customers results in a continued reliance on Government subsidies. When responsibility for electricity generation and supply was decentralized, IAs and Island Councils were pleased to accept responsibility and believed that the activity would be a “cash cow”. Reducing populations, rising high fuel and shipping costs, and low technical capacity has, however, resulted in deteriorating and increasingly dangerous services for many of the OIs and the need for Government subsidies (estimated by OMIA to be over 50%).

214. Sustainable tariff regimes that vary from island to island and reflect the true worth of generating energy would need to be put in place to achieve the Government’s cost recovery targets for the OIs. Full cost recovery would, however, place an unacceptable burden on OI consumers. The introduction of a more appropriate sliding scale of rates for OIs would, on the other hand, drive demand management and force people to conserve and look for alternative sources of energy.

215. OMIA tenders for the supply of diesel fuel for OI power supplies on an annual basis. The fuel is provided to IAs on a duty-free basis. OMIA estimates that the current OI tariffs will need to be raised to an equivalent of rates paid by Rarotonga consumers just to cover the cost of the diesel fuel itself. Policies need to be developed that acknowledge the basic principle that OI energy operations will need to be subsidized.

3. Consideration of Alternatives

a. Gaps in Policy

216. There are gaps in the current energy policy, legislation and regulations. The policy does not specify strategies or provide an enabling environment that promotes alternate energy sources and energy conservation. The policy does not address the need to centralize and share limited technical capacity nor are there strategies or a

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11 Observations for Atiu Power Supply, Office of the Minister for Islands Administration, 10 July 2006
commitment to achieve cost recovery or eliminate cross-subsidies.

217. There is an implicit and realistic acceptance of lower levels of service to the OIs. This, however, is not consistent with policy. There is no long-term plan for capacity building to serve OIs.

218. There is a need for realistic policies regarding electricity service to the OIs. Policies need to be developed that acknowledge the basic principle that OI energy operations will need to be subsidized and could never be self-funding. Current ad hoc funding through IA budgets needs to be replaced with a funding system that will vary from island to island and provide transparent subsidies, specifically for energy.

219. Government should promote the acceptance of realistic levels of service related to the OIs economic development and isolation factors and not related to what can be expected in Rarotonga or New Zealand.

b. Institutional Arrangements

(i) National

220. Prior to the reforms of 1996, the Ministry for Energy was responsible for all policy, regulation and strategic planning for power supply in the Cook Islands. At that time the Electricity Power Supply (EPS) was responsible for the generation and distribution of power on all islands and carried out safety inspections. In the 1996 reforms, the former ministry became a division of the Ministry of Works and EPS evolved into Te Aponga Uira (TAU) on Rarotonga with IAs taking on responsibility for power generation, distribution and supply on each of their respective OIs.

221. The National Energy Division (NED) operates under the Energy Act 1998 and is responsible for development of national energy policy, energy planning, regulation and monitoring of standards for safety, quality, quantity and efficiency of electricity generation, transmission and distribution and the quality of petroleum and other fuels. NED monitors electricity tariffs and petroleum usage but has no regulatory power or responsibility; it coordinates research and promotes the use of alternate sources of energy.

222. NED is currently understaffed (a Director and two staff each in planning and inspections) and underfunded. NED does not have its own dedicated budget and is unable to effectively undertake its functions. NED staff provide excellent inspections services in Rarotonga but do not have the capacity or funding to ensure safety in the OIs. Unqualified staff from the IAs are provided with registration so that they are indemnified from prosecution. NED’s effectiveness in policy review and engagement in alternate energy issues is limited by lack of capacity.

223. Ministerial responsibilities for matters related to energy are spread over different ministries whose mandates overlap. The situation contributes to confusion regarding authority, responsibility, accountability, and reporting and hinders the development and implementation of consistent energy policies and their administration.
224. One option that has been suggested is for the Energy Division to be transferred to the Office of the Prime Minister (OPM) where it would join other technological agencies such as Telecom and Information Technology. OPM is high profile and, since it is not an operational agency, there is less likelihood of overspending its budget allocation. The rationale for this suggestion is that both energy and telecommunications are monopolies requiring large investment and are fundamentally different in nature to other municipality services such as roads and water. Both are rapidly developing sectors necessitating frequent technology upgrades. On the other hand, it is argued that the disadvantage of such a move would be the overshadowing of the small energy division by the high profile telecommunications sector.

225. The option preferred by NED (failing the unlikely establishment of its own ministry) is for the Division to remain as part of MOW but to be provided with its own annual budget.

(ii) Rarotonga

226. TAU is a State-owned enterprise that generates, transmits and distributes electricity to all of Rarotonga Island under the *Te Áponga Uira Act 1991*. The enterprise has its own Board and reports annually to CIIC on the management and status of assets. TAU has a total of 41 staff (power station – 21, distribution system – 11, Billing – 5, Administration – 4).

227. A Cabinet Memorandum of May 2004 has directed TAU to take over responsibility of the Aitutaki and Atiu power supplies as requested by the Island Councils of the two islands. A lack of procedures and budgetary implications have prevented TAU from assuming this responsibility. The lessons learned from this are particularly relevant when considering other changes in institutional arrangements in the infrastructure sectors including the recent directive by Cabinet for the Airport Authority to take over responsibility for all OI airports, and consideration of TAU taking responsibility for power generation and distribution in the OIs.

(iii) Outer Islands

228. Under the provisions of the *Energy Act 1998*, each of the OI IAs is responsible for its respective power generation, distribution, safety and inspection. OMIA is responsible for indirect subsidies for the OIs in the form of grants that offset the islands’ overall budget deficit. There is no explicit policy or formula for subsidization of OI energy services.

229. The Aitutaki Power Supply (APS) operates under the same structural arrangements as TAU but with no legislative backing. Established with the objective of being a self-sustaining commercial entity, APS is reportedly hampered by continued government interference in staffing and tariff issues and is unable to operate as a truly commercial enterprise.

230. There is an Energy Division in each IA. However OIs lack skilled electrical
workers. While the Island Secretary for Mauke is a qualified electrician, only Mangaia has a qualified electrician working in its Energy Division. Because there are no private sector electricians on most of the islands, staff of the Division wire and service household, business and institutional electrical systems.

231. OIs have technicians/mechanics that are responsible for the operation and maintenance of the power supply system. Their skill level however limits their input to routine maintenance and basic repairs. They are also constrained by the lack of proper tools and spare parts. Consequently, breakdowns require mobilizing technicians from Rarotonga or sending the equipment to Rarotonga for repairs and overhaul. Both alternatives are subject to scheduled shipping transport timetables and can mean delays of weeks or months.

232. Several options have been considered during consultations with stakeholders. The first of these is to maintain the status quo. When responsibility for electricity generation and supply was decentralized, IAs and Island Councils were pleased to accept responsibility. Low technical capacity and a lack of maintenance have however resulted in deteriorating and increasingly dangerous services\(^\text{12}\) for many of the OIs. Providing the necessary capacity to OIs is not an economic or feasible option. While all islands need, at one time or another, the services of technical experts such as engineers and electricians, none of the islands has sufficient work to occupy such experts on a full-time basis. Efficiency is further compromised under the current structure where islands are free to operate different systems at varying levels of efficiency and safety.

233. Given the scarce human resources and the scattered nature of the Cls, it is essential that key resources are centralized and shared. This is a principle that is applicable for all sectors. One option would be to seek a policy decision to centralize all energy supply operations under one organization. However, the transfer of total responsibility to TAU for the generation and supply of electricity on all islands is not a viable option at the present – not without a commitment by Government and MFEM to provide budgetary guarantees and the establishment of guidelines for operational procedures.

234. A more practical option would be for a central organization to take over responsibility for the maintenance of standards and safety of energy generation, distribution and household wiring in the OIs. Centralizing these functions would maximize the efficiency of the scarce resources. The equipment required to fulfill these roles is expensive and would only be required on an irregular basis on each of the islands. TAU is the only agency with the skills and required equipment to undertake this role. Proposed institutional arrangements for the energy sector are illustrated in Figure 8.

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\(^{12}\) Observations for Atiu Power Supply, Office of the Minister for Islands Administration, 10 July 2006
235. Each of the OIs should continue to maintain an Energy Section with responsibility for the day-to-day routine maintenance and operations of the generation and distribution systems. TAU would be contracted to undertake the maintenance of standards and safety of generation, and distribution of electricity in OIs on a fee-for-service basis. TAU is currently not completely staffed to undertake these functions but reports that it would not be difficult to do so if Government guaranteed budgets.

236. There are no inspectors on any of the islands other than Aitutaki. The inspectorate of the NED is understaffed and underfunded and unable to enforce the regulations in the OIs. The Inspectorate provides unqualified IA energy workers with interim registration to enable them to continue to carry out the required functions and receive indemnity from prosecution. Both TAU and OMIA\(^\text{13}\) highlight serious safety issues related to distribution and consumer systems.

237. The enforcement of safety should be viewed as a social issue, similar to health and education services, rather than an economic one. It is Government's responsibility to enforce standard safety requirements for OI power distribution and household wiring. Government should ensure that sufficient funds are provided for annual OI inspections.

238. Government should provide funding for the national inspectorate to conduct regular safety inspections on all OIs. That this may not be the reality in the short-term underscores the urgency for having qualified TAU or private sector electricians travel to

Oils to undertake technical work and inspect the work that has been undertaken by IA staff. The current system puts lives in danger and immediate action is needed to ensure the safety of OI consumers.

239. Two steps are therefore recommended. The first is for PDU to immediately contract TAU to undertake a safety audit of all OI (other than Aitutaki) electrical generation and distribution systems and undertake works necessary to ensure that all OI generation and distribution systems meet accepted safety standards.

240. The second is for funds to be made available on an annual basis for TAU to be contracted to undertake the maintenance of standards, safety of generation, and distribution of electricity in OIs on a fee-for-service basis. Staff from TAU will need to make at least two visits a year to each OI. TAU will, where appropriate, contract the private sector to undertake work on its behalf in the OIs.

(iv) OMIA

241. OMIA is currently responsible for the provision of planning, policy and technical assistance to IA energy divisions. OMIA no longer has the capacity to successfully undertake this responsibility.

242. OMIA’s workshop, which reconditions and repairs OI power generators, is well equipped and efficient. Its staff includes an automotive mechanic and two unqualified staff who have several years of field experience and receive hands-on training in the workshop.

243. It is recommended that the overhauling of OI generation equipment be contracted to the private sector and that CIIC assist OMIA in undertaking a due diligence of the assets of the workshop with a view to their possible lease or sale. OMIA’s role in the energy sector will thus be changed to one of a liaison function between IAs, TAU and the national ED.

(v) Alternate Energy Sources

244. The National Energy Policy states that Government is committed to the utilization of indigenous energy sources wherever practical and financially feasible. The ED cooperates with non-government organizations (NGOs) and other regional and international agencies to research and trial the use of alternative energy sources as a means of supplementing existing systems. Current and past activities have concentrated on well established solar and wind energy technologies. Research should be extended to cover emerging technologies, e.g. energy derived from ocean currents, waves and tides.

245. Despite the sentiments expressed in the National Energy Policy and the rhetoric from all sides of government, there is however a discernable lack of understanding of renewable energy resource potential and a resulting failure to provide an attractive enabling environment. The lack of financial commitment by Government has resulted in
ad hoc activities and a reliance on aid-funded projects. These factors leave the sector exposed to activities that are externally driven.

246. The current ad hoc mechanisms for implementing government policies for renewable energy are ineffective and inefficient. It is recommended that the agency responsible for energy policy planning establish a technical committee, with representation from the relevant government agencies and the private sector, to evaluate, and give advice on, alternative energy options and strategies and decrease the reliance on fossil fuels.

247. NED should take full advantage of global research by organizations that have greater technical and financial resources than the government. NED should form strategic partnerships with international institutions such as universities to pursue research in sustainable local alternative energy sources. The aim of these partnerships would be to carry out joint research into identifying technically feasible and financially viable alternative energy sources in the Cook Islands including those that utilize the ocean as the source of energy.

248. Economic analysis shows that rising oil prices will lead to the favoring of alternative energy sources such as photovoltaic (PV) systems. However, such analyses need to consider the additional consumer costs such as the need for DC batteries, transducers or high-cost DC appliances.

249. It is recommended that a review of the energy policy and regulations be undertaken to address issues such as the use of alternative energy sources, self generation of power, and the levels and regulation of tariffs on the development centers of Rarotonga and Aitutaki on the one hand, and the other OIs on the other.

250. The regulations should create economic incentives to promote the use of alternative energy equipment and technologies including solar hot water systems, energy conservation (e.g. innovative building technologies) and household appliances. Such incentives should not be viewed as subsidies but rather as investments that serve to mitigate against rising fossil fuel costs and contribute to an environmentally sound future.

(vi) Training

251. Strong partnerships between the ED, the Office of Human Resources Development (OHRD) and the private sector have led to a human resource development and registration regime that is a model for other utility sectors. The draft regulations detail skill requirements for registration of a variety of levels of electricity professionals. These skills are reflected in courses offered by OHRD. The sector’s workers can qualify as basic linesmen, electricity workers, electricity mechanics and fully-fledged and internationally recognized electricians. The step-wise recognition of progress and certification allows individuals to practise their trade at a variety of levels and is said to contribute to professional standards as well as encouraging the retention of skilled workers in the country.

252. OHRD, in conjunction with ED, provides basic-skills short courses to IA energy
workers as well as school programmes to introduce and attract students to the sector.

253. It is accepted that OIs will not in the short to medium-term locate full time qualified electricians on the OIs. However, a long-term goal should be the development of a capacity building programme to ensure that every IA has the services of a qualified electrician to supervise the operation and basic maintenance of generation and distribution systems and install and inspect consumer electrical services.

c. Private Sector Participation

254. A private sector consultation identified TAU as a State owned enterprise (SOE) that could be considered for Public Private Partnership (PPP). The section of this Volume dealing with private sector participation will address the issue of privatization of SOEs and the establishment of private sector monopolies.

255. As discussed previously, the OMIA workshop in Rarotonga currently overhauls all OI generation equipment. There is a capacity within the private sector to undertake this activity. There is potential for private participation in the overhauling of all OI generation equipment. This could be done through the leasing of the current workshop or through complete sale of the assets.

4. Recommendations

(i) Government to commission a review of the NEP immediately after the development of a NEDS. The review will include a cost recovery study that will inform tariff setting on Rarotonga and the OIs as well as the development of policies relating to OI cost subsidization.

(ii) NED should be allocated its own annual budget and enter into strategic partnerships with international institutions such as universities to pursue research in sustainable local alternative energy sources.

(iii) Establish a technical committee with representation from the relevant government agencies and the private sector to evaluate and advise on alternative energy options and strategies and decrease the reliance on fossil fuels.

(iv) Undertake demand management and safety awareness campaigns in both English and Maori.

(v) PDU to immediately contract TAU to undertake a safety audit of all OI (other than Aitutaki) electrical generation and distribution systems and undertake works necessary to ensure that all OI generation and distribution systems meet accepted safety standards.

(vi) Funds to be made available on an annual basis for TAU to be contracted to undertake the maintenance of standards and safety of generation and distribution of electricity in OIs on a fee-for-service basis. Staff from TAU to make at least two visits a year to
each OI. TAU, where appropriate, to contract the private sector to undertake work on its behalf in the IOs.

(vii) A comprehensive programme to develop the capacity of energy staff on the OIs including: continued on-island and Rarotonga based up-skilling programs for IA staff; a long term strategy through the school star programme to attract students to the sector and, in the short-term, the engagement of regional low cost electricians.

(viii) OMIA’s role in the energy sector to change to one of a liaison function between IAs, TAU and the national ED. TAU and OMIA to nominate staff and develop liaison procedures. A Memorandum of Understanding (MOU) needs to be developed and signed by TAU, OMIA (on behalf of IAs) and MFEM.

(ix) The overhauling of OI generation equipment to be contracted to the private sector and CIIC to assist OMIA in undertaking due diligence of the assets of the workshop with a view to leasing or sale.

N. The Municipal Services

256. The three sectors of water resources, sanitation and solid waste management will be dealt with in this section. The protection of water resources (a term used here to include lagoon, surface and ground water) is perhaps the most important economic and social issue facing the Cook Islands. Municipal services within the water, sanitation and solid waste sectors are intricately intertwined in their effect on water resources. Under existing legislation, three government agencies share the major responsibilities for the water, sanitation and solid waste sectors. This and previous TAs have identified fragmented institutional arrangements that lacked coordination between the agencies involved. The fragmentation results in ineffective regimes for management and no clear ownership of policies, strategic plans or regulation at the national level. The lack of ownership and failure to take responsibility is borne out by the failure of government institutions to act on the contents and recommendations of a number of recent studies, and to ratify draft legislation and regulations.

257. The results of an analysis of institutional issues related to the provision of municipal services in the Cook Islands has been discussed previously in Section IV CROSS-CUTTING ISSUES of this Volume. The conclusions reached in this analysis are germane to all three sectors (water, sanitation and solid waste management) and will be presented at the end of this section.

258. The generic comments made in Section IV relating to Business Plans and recommendations for their improvement made are also of particular relevance to all three sectors. Discussions of Business Plans will not be undertaken for each individual sector. They will instead be presented at the end of this section.
1. **Water**

   a. **Introduction**

   259. As illustrated in Figure 9, the Ministries of Works and Health, the National Environment Service, OMIA and the Island Administrations are the main government stakeholders in the water sector. CIIC, as custodian of all government assets including water collection and reticulation systems, is also a stakeholder in the sector. All water intakes on Rarotonga and the OIs are on traditional land, making landowner and communities essential partners in the protection and utilization of the resource. All water is currently provided free of charge through reticulated systems in Rarotonga and the islands of the southern group. The water provided through these systems is not potable.

   ![Figure 9: Current Institutional Arrangements for the Water Sector](image)

   b. **Assessment**

      (i) **Policy, Planning, Legislation and Regulations**

   260. Government has not adopted any policies relating to the water sector. In the absence of any existing policy it is considered most effective to address all issues relating to regulation and policy in the one section.
261. The Supportive Services Act 1994 and the Rarotonga Waterworks Ordinance (11 of 1960) provides for the MOW to undertake development, operations and maintenance of water supplies, including headworks and networks, in Rarotonga and the OIs. Both pieces of legislation are outdated. At devolution in 1996, MOW maintained responsibility for waterworks in Rarotonga while responsibility for OI waterworks was transferred to the respective IAs.

262. The Public Health Act 2004 provides for the establishment of safety standards through national regulation of the supply of water in reticulated supplies. In the absence of such regulations, standards provided by the World Health Organization and by the New Zealand Ministry of Health's Drinking Water Standards for New Zealand 2000, are used for microbiological and non-microbiological compliance.

263. The Environmental Act 2003 places responsibility for monitoring environmental and sustainability issues related to potable water with NES. There are no nationally adopted regulations addressing environmental and sustainability issues. Draft regulations and processes addressing collaboration and cooperation with landowners to protect and police water catchments have been developed under the International Waters Programme (IWP) for one catchment area in Rarotonga. The regulations and processes developed under the IWP provide a possible model for national application.

264. The draft legislation developed during a recent ADB TA includes provision for the establishment of a Water Board. Regulations developed for the sanitation sector (see below) include provision for the establishment of a Sanitation Board. International experience shows that the establishment of a single authority with responsibilities for water resources brings efficiencies, reduces duplication and better addresses the issues of cost recovery.

(ii) Ownership of Resources

265. All water intakes on Rarotonga and the OIs are on traditional land and there is a commonly held view that the water resources belong to the people. Under current arrangements, the Government has reached agreements with landowners and Island Councils (Vakas) or the traditional chiefs (Ariki) and makes annual leasing payments for the use of the land where the intakes are located.

266. Once the leasing arrangements have been settled, there are little or no further discussions between the two groups. Protection of catchments, the changing needs of users and/or increasing exploitation of water resources are not discussed. A pilot project involving landowners in the protection of catchment areas has been discussed above. The concepts of user pays and private sector participation will no doubt see the emergence of landowner issues, both in relation to land and ownership of the resource. This issue is discussed below.

(iii) Private Sector Involvement

267. There is currently limited private sector involvement in the water sector. The
private sector does, however, believe that it has the capacity for greater participation in the sector including undertaking contract work for the upgrading of networks of reticulation systems and the maintenance, servicing and overhaul of pumps, filters and associated equipment. The private sector states that, given guarantees of longer term contracts (3-5 years), contractors would invest in the training and equipment necessary to establish and maintain a meter installation, calibration and maintenance function. Private sector involvement in the operations and maintenance of reticulated water systems would be contingent on government funding assistance for the necessary mains upgrade to reduce the current unacceptable levels of loss, the introduction of cost recovery mechanisms and the formalization of landowner issues related to water sources and network systems.

(iv) Financing

268. All costs associated with the supply of water to residents in Rarotonga and the OIs are currently met by government from taxes and other revenue. Estimates for cost recovery for the reticulation systems of Rarotonga and the islands in the southern group have been calculated on the basis of NZ$1.00 per cubic meter and a daily consumption of 1,500 liters per head of population. The estimated revenue would pay for 100% of the O&M costs of a fully treated system in Rarotonga and about 60% of O&M costs in the other islands.

c. Consideration of Alternatives

(i) Institutional Arrangements

269. The Water Works Division (WWD) of MOW is responsible for the development, operation and maintenance of the water supply in Rarotonga. The WWD is headed by an engineer supported by one trainee engineer, a certificated water quality technician, 2 certificate-level trainee hydrologists and a field operations team consisting of a supervisor, two foremen and six experienced pipe fitters. The division maintains the island’s water supply system and is sometimes hired out at an uneconomic rate to undertake domestic services.

270. The system is characterized as inefficient and outdated. Public perception is that standards are declining. Issues which contribute to the current situation of confusion and underperformance include: high losses due to corroded pipelines; non-drinkable tap water posing a public health risk due to lack of disinfection; poor management of catchment safety; a lack of detailed knowledge in relation to the quality and extent of water resources; and duplication. The IA for each island of the Southern Group is responsible for the development, operation and maintenance of the water reticulation systems and the maintenance of community water storage tanks on their respective islands. As with the energy sector, the staff of the IAs provide service to householders on a fee paying basis.

271. The infrastructure staff of the IAs in the Northern Group maintain community
water tanks that collect water off the roof catchments of public buildings. They also provide technical advice to residents, if requested.

272. MOW staff, when visiting the OIs, assist in the planning, development and works supervision of OI waterworks proposals by providing training to IA infrastructure staff.

273. As with all infrastructure sectors, OMIA’s lack of staff, limited technical capacity, and funding issues are major constraints to its involvement in its designated functions. It is difficult for OMIA to effectively facilitate the maintenance of existing infrastructure in the islands as well as anticipating and planning for additional demands resulting from new developments. OMIA has no civil engineers on staff and is therefore unable to provide technical support and advice to the OIs for all the utility sectors. OMIA should provide a focus for liaison and contact between each of the IAs and the Waterworks Division of MOW or the private sector. MOW staff either work directly with IAs or in partnership with international and regional agencies and private contractors.

274. Options for institutional arrangements for the operation and maintenance of water works in Rarotonga and the southern islands with reticulated systems range from full privatization to maintaining the status quo. Increased private sector participation through PPPs could be possible, in the medium-term, in Rarotonga and perhaps Aitutaki but would be contingent on resolution of issues previously discussed including the high losses currently being suffered in Rarotonga due to old and badly maintained networks, the introduction of cost recovery or user pay mechanisms, and ownership of land and resources. As stated earlier the Government has, through negotiation, leased land to establish intakes. When confronted with the possibility of privatization, landowners state that the land was leased to Government so that a service could be provided to all the people. They therefore question the right of Government, under the current lease arrangements, to pass on these assets to the private sector for companies and individuals to make profits. Resolution of these issues is beyond the scope of this TA.

275. As with all other technical areas, there is a severe shortage of professional and technical skills in the water sector. A discussion of the generic issue relating to limited technical capacity and a consideration of the alternatives has taken place earlier in this Volume. As with other sectors, it is recommended that resources be centralized to establish a core technical group of water professionals and that OI IA infrastructure staff capacity be developed through an ongoing training programme. OMIA should provide a focus for liaison and contact between each of the IAs, the centralized technical pool and the private sector.

276. The IAs in the southern islands should continue to be responsible for the day-to-day management and operation of island waterworks. They suffer from serious skill deficiencies however and their staff require on-going training in the maintenance and operation of the distribution pipe networks. Southern Islands IA staff would also need training in accounting and customer relations if user-pays systems were to be introduced. Increased private sector participation, particularly in Aitutaki, is strongly recommended.

277. IAs should continue to be the responsible agency for water in the northern group. As with their counterparts in the southern islands, staff of the northern islands lack skills and access to training. However, because of the nature of the water systems in the northern group, the primary focus of training should be how to advise and assist
households to maximize their water catchment and improve and maintain water quality. In addition, they need skills to maintain community tanks, and install and maintain pipelines piping water from community tanks to households. Responsibility for the maintenance of household water tanks should rest with householders.

(ii) Institutional Collaboration

278. Issues related to institutional fragmentation have been discussed and alternatives considered in Section IV of this Volume.

(iii) Monitoring of Water Quality

279. Issues related to the monitoring of water quality have been discussed and alternatives considered in Section IV of this Volume.

(iv) Water Conservation

280. Due to the nature of life on resource-limited islands, a deep respect for the protection of water sources and the efficient use and conservation of water are part of the traditional culture of the people of the OIs. This is especially applicable in the Northern Group where inhabitants have highly developed water conservation and demand management regimes. However, the adoption of western cultural lifestyles and free supply of reticulated water has led, particularly in Rarotonga, to inefficient and wasteful use of water.

281. Community awareness programmes, highlighting the finite nature of water resources and presenting the environmental and economic realities, should be initiated to promote water conservation. The programmes should build on traditional water conservation practices and attitudes and water conservation should be integrated across all subjects and levels of the school curriculum. However, lessons from overseas show that people do not value what they perceive to be free. Generic issues relating to cost recovery and user-pays systems for municipal services were discussed earlier in this Volume. Issues and alternatives specific to the water sector are discussed below.

d. Cost Recovery

282. Cross-cutting issues relating to user-pays and cost recovery have been discussed in Section IV of this Volume. Discussions relating to the introduction of a user-pays system for water have been ongoing for several years. The issue is politically sensitive even though all politicians and political parties consulted agree that it is necessary. No tariffs are currently charged for consumers on islands with reticulation systems. It is reported that Rarotonga consumers did pay water tariffs in the past. A legacy of this past system and more recent trials is the fact that some consumers are
metered though no readings are being taken. Landowners argue that the water belongs to them; they are not compensated for its use and question why government should charge for water. Consumers question the logic of paying for water that cannot be safely consumed. This line of logic has some credence as far as domestic users are concerned but no relevance for water used for commercial purposes, especially hotels catering for international visitors. It can be argued that the government has the right to recover the large investment in piping the water to consumers and the not inconsiderable cost of operation, maintenance and upgrading of the network.

283. Options for the introduction of a user-pays system for water in Rarotonga and islands where there is a reticulated water distribution system are discussed below.

284. The first option is a do nothing (status quo) option which is based on the understanding that government owns the resource and will continue to use the taxation system to provide free water to all consumers. A performance-based funding system will need to be introduced whereby the annual budget allocated, to MOW for O&M and to the IAs that manage water distribution networks, would depend on performance against efficiency targets including reduction in unaccounted-for water levels. This will improve the efficiency of use of water and will make the operation more sustainable but the disadvantage would be the lack of incentive for consumers to recognize that water is a valuable resource, and conserve it. Because the water is free, they would continue to see repair of leaking taps and cisterns as a cost rather than a saving.

285. The second option would be a variation to the above and involve the introduction of a tariff based on a volumetric charge to commercial premises, with no tariff for domestic households. This would allow some recovery from large users and take into account the community attitude that the water is “theirs”. Water will be free to households, but visitors and commercial users would pay according to use.

286. A third option would be to introduce a full user-pays system, whereby consumers pay for the water they use. The charge to consumers would cover O&M and full cost recovery of assets. Tariff charges would be subject to approval by Cabinet or a tribunal to ensure affordability. Consumers would have an incentive for efficient operation of the system, including the repair of their own in-house leakages. Traditional land owners and/ or Vakas could be paid a raw water payment. Such a system will require the installation of meters and the introduction of accounting and billing systems.

287. The full user-pays system for water is the preferred model overseas and is recommended for all islands with reticulation systems. However, it is strongly suggested that, before its introduction, government should initiate extensive community debate.

288. It is essential that disinfection systems be introduced into all reticulation systems prior to the introduction of a user-pays system. While the full treatment of water is not an essential prerequisite for a user-pays system, it is recommended that this should be progressively introduced into reticulation systems starting with Rarotonga and Aitutaki.

289. A detailed discussion of the pros and cons of user-pays systems for municipal utilities has been undertaken elsewhere in this Volume. Following a detailed study of the water sector and the introduction of disinfection systems, user-pays systems could be introduced for the reticulated waters systems of Rarotonga and Aitutaki. Consideration could then be given to extending the system to the other southern islands with
reticulated systems. Capacity development and training associated with the introduction of user-pays water services would include: technical training in meter installation, reading and calibration; the establishment of accounting and billing systems; and the training of administration staff in the operation and maintenance of these systems and in improved customer relations.

290. One option for rate collection that has been discussed in the past and still has credence is the modification of the TAU accounting system to include collection of water charges.

291. Government, through AMD and MOW, should develop strategies for the introduction of user-pays systems in Rarotonga and Aitutaki commencing initially with metered water use and volumetrically varied tariffs for commercial users. As a second step, a variable volumetric tariff for all domestic consumers based on a standard minimal use, levied so as not to disadvantage the economically challenged, should be introduced.

292. Consideration could then be given to extending the system to the other southern islands with reticulated systems. However, the quality of the water provided by some of these systems would need to be vastly improved through treatment prior to considering the levying of tariffs. Landowner and political difficulties should be expected.

2. Sanitation

a. Introduction

293. Figure 10 depicts current institutional arrangements for the CI sanitation sector. Under existing legislation, three government agencies share the major responsibilities in the sanitation sector: MOH, NES and MOW. MOW has the responsibility to develop and include in the Building Code, specifications for the construction of septic tanks. MOH issues permits for the construction of septic systems and is supposed to inspect their construction and monitor their operation. MOH does not have the technical capacity to undertake this latter function and MOW building inspectors undertake inspections of septic facilities as part of the building construction inspections. As part of its responsibility to protect foreshores, inland and Cook Island coastal waters, the NES is responsible for construction site inspections and approving the siting of septic systems and septage processing facilities and monitoring their discharge.

294. The review undertaken through ADB TA 4273-COO\textsuperscript{14} identified fragmented institutional arrangements and concluded that the fragmentation results in an ineffective regime for managing the pollution caused by poorly placed and constructed or inadequately maintained septic tanks and sewage treatment systems. The ongoing NZAID-funded Cook Island Ministry of Marine Resources Institutional Strengthening Project (CIMMRISP) identifies the unchecked pollution from septic systems as a major

\textsuperscript{14} ADB TA 4273-COO: Technical Assistance to the Cook Islands for Legal and Institutional Strengthening of Environmental Management. 2003.
threat to ground water and the health of lagoon systems.

Figure 10: Current Institutional Arrangements for the Sanitation Sector

(i) Policy and Planning

295. There is currently no national policy addressing sanitation issues. A set of regulations for sanitation was developed by ADB TA 4273-CO015 and has been reviewed and revised by stakeholders. These regulations have not been approved. The regulations update sanitation standards to the equivalent of Australian and New Zealand standards and will form the basis for the development of a national sanitation policy.

(ii) Legislation and Regulations

296. The Building Control and Standards Act 1991 and the Building Control and Standards Regulation 1991 require MOW to develop and include specifications for the construction of septic tanks in the Building Code. Stakeholders advise that the current Building Code sanitation requirements are inadequate. The regulations have been developed to acceptable international standards and should be used to instruct the

15 ibid
revision of the Building Code. It is instructive to note that private sector members of the newly formed Plumbers and Waster Water Association advise that most major plumbing contractors in Rarotonga already work to the Australian and New Zealand codes.

297. The Public Health Act 2004 provides the authority for MOH to regulate the quality of discharge of devices and facilities, plants and systems that treat sewage and the removal and disposal of liquid waste. There are no specific regulations setting out effluent quality but relevant New Zealand and World Health Organization standards are applied. MOH is also charged with the responsibility to issue permits for the construction of septic systems and is supposed to inspect their construction and monitor their operation.

298. The Environment Act 2004 authorizes the National Environment Service to deal with "Specific Areas of Concern" regarding the protection of foreshores, inland and Cook Island waters including the siting of septic tanks and septage treatment systems and through monitoring, ensure that the effluent standards set by MOH are maintained.

299. The Outer Islands Local Government Act 1987 provides for the Island Councils to make by-laws to regulate and control septage collection and disposal but no known by-laws are in place. Stakeholders are unanimous in their recommendation for a single national sanitation standard.

300. All stakeholders are in agreement with the technical aspects of draft regulations. Adoption has been held up because of uncertainty in the institutional arrangements for the application of the regulations.

(iii) Private Sector Involvement

301. Private sector plumbing businesses with qualified plumbers operate in Rarotonga and Aitutaki. While there are no organized plumbing businesses on the OIs, individuals with plumbing skills and experience provide their services on a commercial basis. Private sector plumbing services construct septic systems on Rarotonga and Aitutaki while private persons with some skills construct septic systems for customers in the OIs. Private sector contractors provide a septic tank sludge pump-out service to householders on Rarotonga. Householders' payment for this service includes the cost of transport and dumping the sludge into the septage pond at the Waste Management and Recycling Unit (WMRU).

302. There is currently no septage removal service in the OIs even though there is a septage pond in the new WMRU on Aitutaki. Septic tanks in Aitutaki and the other OIs are currently emptied out manually and the septage dumped in a hole dug near the septic tank. This practice is a serious health hazard and contaminates the surrounding water table.

303. MOW and the Aitutaki Island Council operate the septage treatment facilities in Rarotonga and Aitutaki respectively. The current rates of return on the operations do not make them attractive to the private sector and operations will need to continue to be subsidized.
(iv) Financing

304. The sanitation sector has the notable distinction of being the only sector not receiving any direct funds for capital expenditure in fiscal year 2005/06 either from the general government budget or donors. (Source: Cook Islands Appropriations Amendment 2005-2006). However, according to the Public Health 2006-7 Business Plan, MOH has access to substantial funding including NZ$132,900 from NZAID and $420,000 from the Environmental Protection Fund to conduct the activities detailed above.

305. There are few opportunities for cost recovery within the sector. The Rarotonga WMRU has a basic charge for the dumping of sludge. However, the revenue covers less than 10% of O&M costs and operations will need to continue to be subsidized. The charging of rates for customers of proposed village systems is estimated to raise around 60% of estimated O&M costs.

306. Both NES and MOH charge developer/owners of new constructions a fee of NZ$10 each for site inspections, and a permit to build a septic tank.

(v) Current Institutional Arrangements

307. The situation as it stands requires the developer/owner of a new construction to:

- have NES undertake a site inspection to ascertain whether an environmental impact assessment report is required and, if so, to conduct such an assessment and recommend and approve siting of the septic facility;
- obtain a permit from the MOH for the design and construction of the septic facility;
- take the two permits issued after the above processes to MOW for the issue of a permit for the construction of the building.

308. Under draft regulations, MOH would have the responsibility for the entire process commencing with applications to build systems through to site inspections, approval to operate, and continued inspections and monitoring. The Secretary for Health would be empowered to appoint persons with the necessary technical qualifications from within government, or fee-charging private sector individuals, as inspectors to undertake site inspections, supervise construction and monitor operations.

309. MOW would maintain the responsibility for the Building Code and for the operation of the Rarotonga Waste Management Center septage treatment.

310. It is reported however that there have been second thoughts as to the effectiveness of such a system based on whether MOH has the technical capacity to provide the necessary policy, planning and technical leadership and support to the OIs. There are neither plumbers nor structural and sanitation engineers currently employed by MOH and the placement of such technical skills in MOH was considered to be an inefficient use of scarce resources.
(vi) Draft Sanitation Regulations

311. The draft regulations would set in place robust and up-to-date procedures and standards. They would also establish a Sanitation Board with responsibilities to: establish criteria for the registration of sector professionals; review and approve technology; review and recommend to government on-going revisions to the legislation and regulations; and provide a conduit for government policy directives.

312. Stakeholders argue that the sector should, like the electricity sector, not wait for the formal approval but immediately put into place the institutional and procedural systems required under the draft regulations (including the Sanitation Board) and use the draft regulations as guidelines for operation. International best practice would, however, suggest combining water and sanitation regulation and management. The inclusion of solid waste would, considering the importance of water resources in the Cook Islands, the current fragmentation, and limited capacity further improve efficiency and reduce duplication.

(vii) Monitoring

313. There is no effective regime of testing to monitor the effects of septic tanks and sewage treatment systems on ground and lagoon waters. As with the whole of the sanitation sector, the institutional arrangements are fragmented and lack coordination. The issues relating to monitoring of water resources and full consideration of the alternatives have been addressed earlier in this volume. It is sufficient to note that the pollution of lagoons and surface and ground water is a critical issue, and government and stakeholders need to work in a collaborative and cooperative fashion to develop and implement a sustainable and effective monitoring system.

(viii) Outer Islands

314. Increasing numbers of OI households are installing flush toilets and constructing septic systems. The Outer Islands Local Government Act 1987 provides for the Island Councils to make by-laws to regulate and control septage collection and disposal but no known by-laws are in place. The Aitutaki Island Council is understood to be preparing to enact The Regulations. It is essential that whatever regulations are finally adopted, they are applicable to the whole country.

315. The Aitutaki Island Council operates a WMRU similar to that in Rarotonga but the island does not have a vehicle or service to de-sludge septic tanks and transport the sludge to the facility.

316. While an increasing number of OI residents are changing from lagoon and pit toilets to the more hygienic flush toilets and septic systems, none of the outer islands currently have septage treatment facilities. Currently, the health inspector on each OI is responsible for the acceptance of applications to construct septic systems and for
supervising their construction. They are also responsible for the inspection and monitoring of existing systems. It is considered that even though OI Health Inspectors have received some training under the ADB/NZ AID co-funded Marine Resources project they lack the capacity to effectively discharge their functions. One possible alternative is to have IA infrastructure staff with plumbing and construction skills assist in this function. However, even if these responsibilities are eventually shared with the infrastructure specialists in the IA and/or private sector personnel, ongoing capacity building will be required.

317. There is evidence that the effluent from poorly constructed and maintained septic tanks are polluting ground water in the OIs. This is of particular concern in the islands of the southern group where ground water is utilized for their reticulation systems.

(ix) Community Awareness Campaign

318. MOH has both the funding and capacity to provide the education necessary to improve public awareness of the purpose of the proposed regulation. The mainstreaming of sanitation issues within the formal and informal education and vocational training curricula should be an integral part of the awareness and education strategy. Schools should be encouraged to include sanitation as part of their environmental programmes from early childhood to senior school student levels.

319. Community awareness is the key to more positive action to implement sanitation strategies. Knowledge and understanding of the implications of unsafe sanitation practices should lead to appropriate action. As a rule, however, changes in behavior are not effected by the simple input of information, and incentives may be required, such as the likelihood of specific negative effects on livelihood and prosperity. Unchanged sanitation practices have the potential to contribute to serious negative economic consequences.

(x) Capacity Building

320. There is currently no regulation of professionals in the sector. It is reported that the CIMMRISP has assisted in the development of strong partnerships between government agencies and the private sector that are leading towards a human resource development and registration regime. The Plumbers and Wastewater Association is a result of this development. The Association is driven by the public sector and argues that the sector requires professional regulation to maintain standards.

321. The Association needs to liaise with DNHRD to work cooperatively in the development of in-country courses, access to overseas training opportunities and attachments, and the provision of funding to ensure OI staff attend training courses in Rarotonga and trainers conduct courses in the OIs.

322. IAs, MOW staff, authorized inspectors, master plumbers and construction foremen will need training in approval of designs and limits of designs, construction principles, inspection of systems and accreditation.
323. NES staff require training in legal enforcement and prosecutions to ensure that all aspects of case development including scene investigation, witness statements, collection and safe storage of exhibits, preparation for court appearances, and court procedures are effective.

324. Laboratory staff will require training in sample testing for microbiological, organic and inorganic testing, equipment use, monitoring schedules, data collection, and custodianship and reporting. Field staff will need to be trained in sample taking and management.

325. There is a need for basic and more advanced plumbers, master plumbers and inspectors involved in the installation of septic tanks, filters, and the renovation and rebuilding of tanks.

326. With the introduction of new technologies for wastewater management, such as the neighborhood treatment plants in Rarotonga and the more advanced systems for use by households in environmentally sensitive areas, there will be a need for skilled operators who can audit, maintain and repair such units. A pool of such technicians will be needed. As the course for a licensed operator takes at least 12 months, the training process should be started as soon as the feasibility studies have been approved for implementation.

3. Solid Waste

a. Introduction

327. The Government agencies sharing the responsibilities for solid waste disposal are the same as those in the water and sanitation sectors. As with the water and sanitation sectors, institutional arrangements in the solid waste sector are fragmented, policy and regulation outdated, and management regimes ineffectual. MOW has the legal responsibility to provide the public solid waste disposal facilities. MOH has the authority to issue permits for the construction of waste disposal sites and the responsibility to monitor the collection, treatment and disposal of solid waste. NES is responsible for policy and strategic planning of solid waste disposal and is empowered to deal with issues regarding pollution from waste disposal sites. The private sector and communities have, in more than any other of the relevant sectors, opportunities for important roles in the solid waste sector.

b. Assessment

(i) Policy, Planning, Legislation and Regulations

328. The Supportive Services Act 1994 requires that MOW provide the public facilities, including those for solid waste disposal, required for the development of the Cook Islands. The Rarotonga Island Council: (Empowering Public Works and services)
Ordinance (4 of 1959) empowers the Councils to provide refuse disposal facilities and to levy such charges as necessary to carry out the works. The Waste Management and Recycling Unit (WMRU) of MOW operates a Waste Disposal Center (WDC) in Rarotonga. The Aitutaki IA operates a similar WDC facility on behalf of the Island Council. The WMRU is also responsible for the operation of landfill and recycling facilities designed and constructed under the ADB Waste Management Project.

329. The Public Health Act 2004 provides for the MOH to: issue permits for and oversee the construction and engineering of waste disposal sites; and monitor the collection of waste and its treatment and disposal.

330. NES is responsible for policy and strategic planning of solid waste disposal and is empowered under the Environment Act 2004 to deal with “Specific Areas of Concern” regarding pollution from solid waste disposal sites. The National Waste Policy and Strategy developed more than 12 months ago as part of the landfill project is yet to be approved. NES reports that approval has been delayed because of the absence of strategies for disposal of post-cyclone green and building waste. As a result of stakeholder consultations undertaken under this TA the private sector has agreed to assist in the development of these strategies. The National Waste Policy and Strategy proposals for institutional arrangements are shown in Figure 11.

(ii) Private Sector Involvement

331. The private sector is involved in various contracts and self-generated activities in Rarotonga in support of waste management. Private contractors collect household solid waste in both Rarotonga and Aitutaki for delivery to the waste disposal facilities. Householders are required to separate organic and recyclable waste for collection. Private contractors are engaged on an as-needed basis to spread and compact solid waste at the two waste disposal facilities. However, contractors state that the current one year contracts do not encourage investment.

332. Other private sector initiatives include a waste oil recovery system, aluminum cut-offs and cans, scrap metal recycling, the crushing and packing of industrial cardboard for export, and recycling of soft drink bottles. It is reported that the once economically viable shipping of glass and plastic to New Zealand is no longer undertaken. This continues to place a strain on the WDC. Private sector elements involved in recycling for export activities leverage shipping space from related businesses and serve the dual purpose of providing funding to cover operational costs and reducing stress on the MOW operated landfill.

(iii) Community Involvement

333. The management of waste should be a partnership between government, communities and the private sector. In Rarotonga, there are several community initiatives for the protection of the environment and recycling of solid waste.
(iv) Financing

334. Solid waste management is another sector with low budgets. In fiscal year
2005/06 only NZ$30,000 was allocated for capital expenditure in this sector. (Source: Cook Islands Appropriations Amendment 2005-2006). The apparently low level of funding may be a reflection of large investments in the sector (the two landfill sites and the waste recycling station). It may however highlight the low priority allocated to addressing the same issues on the outer islands.

(v) Waste Disposal Centers

335. In Rarotonga, where WMRU has responsibility for the WDC, Unit staff include one engineer and four site workers. The original plan for the WDC was that MOW would manage the site for a year and then contract out or privatize the operations with NES taking over responsibility for monitoring of the site.

336. Full privatization of the center is not a viable option at present as the sum total of operations is uneconomical. MOW believes that a mix of contracting out of operations and management and private participation in the recycling center is a possibility. This operation is currently run at a loss and the private sector does not agree with MOW’s assessment that it is a potentially profitable enterprise. The proposal (see Volume Two) for the development of a transfer center where refuse is separated is widely supported by stakeholders.

337. A WDC was constructed on Aitutaki under the same ADB funded project. The facility has not yet been issued with a completion certificate. The Aitutaki WDC is operated by the Island Council and it is intended that the responsibility for the monitoring of the facility will be handed over to NES as soon as the completion certificate is issued.

338. IAs are responsible for policy, planning and implementation of solid waste disposal on each of their islands. All IAs provide free weekly collection of solid waste from households. Landfill dumps are operated away from villages. There is no separation of organic and inorganic waste nor any organized recycling. Vaka Councils in Rarotonga have no formal responsibilities but have taken the initiative to assist in the controlling of roadside waste to assist households to dispose of household waste.

339. IAs have little or no capacity to develop policy and strategic plans or to implement, manage and operate safe solid waste disposal systems. OMIA does not have the capacity to provide the technical advice and support necessary to assist and strengthen the ability of IAs. MOW currently provides a technical advisory service on solid waste disposal to the OIs on request. Assistance is currently provided to Aitutaki, Atiu and Mangaia and MOW would like to extend this service to all OIs and to include technical capacity building and strengthening of IAs capacity to develop policy and strategic planning for the disposal of solid waste.

340. NES has staff in Aitutaki, Atiu and Mitiaro with another four IAs requesting a fulltime presence. MOH has Health Inspectors on all islands. As with all other municipal sectors, the solid waste sector suffers from fragmented institutional arrangements and a lack of coordination between the three government agencies involved. The rhetoric of meetings between the agencies in Rarotonga is not translated into action in the field. The failure to adopt the National Waste Policy and Strategy developed more than 12 months ago and the lack of pollution monitoring at both the Rarotonga and Aitutaki...
WDCs are symptomatic of the lack of coordination at both the policy and operations levels.

(vi) Monitoring

341. The contractors who constructed the site conducted some training of MOW and NES staff on testing procedures. Analysis of the initial tests was undertaken in-house by MOW, at the MOH laboratory at Rarotonga Hospital and in New Zealand.

342. A suggested regime for testing was prepared by the contractors and under current legislation the responsibility for monitoring rests with NES. However, no testing has been conducted since the original testing took place more than a year ago because NES will not take on its responsibility for monitoring the site as no formal handover has taken place. Neither MOW nor NES has the technical capacity to analyze tests. Site testing at both Rarotonga and Aitutaki needs to be included in the comprehensive water resources testing regime proposed earlier in this Volume.

343. MOH undertakes regular site visits to the Rarotonga and Aitutaki facilities to check for leaks and pests. MOH conducts regular spraying for flies. Health Inspectors on each of the OIs have the responsibility to monitor solid waste disposal though a lack of training and funding mitigates against their effective participation.

(vii) Community Awareness Campaign

344. There is an urgent need to increase community awareness about the need for proper disposal of garbage. The program should be combined with education about sanitation and personal hygiene. An ongoing public education campaign must be implemented. The program should also include the “3R campaign” – Reduce, Recycle and Reuse. This is essential if the government’s Millennium Development Goal of 30% reduction in waste disposed at landfill sites is to be achieved.

(viii) Cost Recovery

345. The solid waste collection service on Rarotonga and the OIs is provided free of charge to consumers by MOW and IAs respectively. This service is contracted out to the private sector in Rarotonga and Aitutaki and undertaken by IAs in other OIs. In Rarotonga and Aitutaki people taking their own solid waste to the facilities are charged a nominal fee. Current estimates by MOW for the continued cost of operation of the Rarotonga and Aitutaki waste disposal facilities place full cost recovery beyond consumer capacity. Fees could however be charged the solid waste collection service provided in Rarotonga and the OIs and estimates are that if such fees were charged they would cover approximately 80% of O&M costs.
(ix) Increased Private Sector Participation

346. Private contractors who collect household solid waste for disposal at the waste disposal facilities complain that the current one year contracts do not encourage investment on their part. MOW, on the other hand, states that one year contracts allow MOW to have better control over contractor performance. Both concerns could be met if contracts were let for longer periods of time and included measurable performance indicators that contractors needed to meet. Independently monitored performance could allow for incentive payments for better than agreed performance and penalties when agreed minimum levels of performance were not achieved.

347. The refuse collected by contractors and taken to the MOW landfill does not undergo separation and a mixture of organic and inorganic waste is currently dumped into the landfill. Private sector elements involved in recycling for export have developed their own technical expertise and capacity and estimate that, at the current rate of dumping, the landfill’s life span would be reduced by up to 40%. The current compaction and export of industrial cardboard has resulted in 25 containers already shipped to New Zealand. There is potential for significant landfill space saving if household cardboard is recycled.

348. The solid waste sector provides opportunities for productive public – private – community partnerships. Community participation begins with the separation of waste for collection by private sector contractors. The private sector could be assisted in the development of a transfer station to which refuse collected from households is taken for sorting into recyclable, compostable, and waste to be dumped at the landfill. The benefits would not only be environmentally beneficial but would also enable the life span of the landfill to be extended by reducing volumes dumped.

4. Preferred Options for Municipal Services

349. Until such time as Government develops its NEDS and the relevant Government stakeholders take ownership and display a willingness to undertake responsibility and reduce fragmentation, there is little hope of formulating, adopting and implementing a national policy for the management of water resources. Firm institutional recommendations at this time are therefore highly contentious and beyond the scope of this TA.

350. The preferred option for the institutional future of the municipal services would see the three sectors maintaining the status quo and ceasing policy and regulatory work until such time as a NEDS is approved. Government would undertake a comprehensive, sector wide review with a view to developing consolidated policy and regulations, reducing duplication, consolidating capacity and taking note of international experience and lessons learned.

351. The policy unit of the OPM would provide leadership in the development of a
consolidated municipal services policy and assist in the development of business and action plans with SMART\textsuperscript{16} indicators, reliable baseline data and realistic targets.

352. The preferred option for the provision of chemical and biological analysis would see Government establish a central testing facility for all environmental testing in conjunction with, and under the management of, the existing MOH laboratory. Donor funding would be required to build and equip the laboratory and to provide the training for staff. Government would need to fund the technical staff and the on-going O&M costs.

O.    Telecommunications

353. Telecommunications services are provided by a private company and as such no institutional analysis and recommendations will be made by this TA.

354. Agencies involved in the Telecommunications sector are Telecom Cook Islands Ltd (TCI), government ministries, IAs, and the private sector. TCI is the sole provider of telecommunications in the Cook Islands. TCI is a private company owned by Telecom New Zealand (TNZ) Ltd (60%) and the CI Government (40%).

355. TNZ is reported\textsuperscript{17} to have made an annual profit of around NZ$8 million. This is believed to be a handsome return on TNZ’s equity and the dividends paid to the Government represent a significant proportion of its annual earnings.

356. It is reported that TCI’s current monopoly agreements with government are due to expire and that negotiations for extension of the arrangements are underway. Undoubtedly Government will consider the effects on both consumers and its own budget before deciding between continuing the monopoly or opening the network to other providers.

P.    Evacuation Centers

1.    Introduction

357. Component One of this project, undertaken by Pacific Islands Applied Geoscience Commission (SOPAC) and the Ministry of Civil Defense NZ from August 2005 to March 2006, was designed to strengthen the disaster mitigation and preparedness arrangements in CI. The final report resulting from Component One addresses all institutional issues relating to Disaster Management & Mitigation and these findings will not be repeated here. This section will deal exclusively with institutional issues related to Emergency Management Centers (EMCs). EMCs have been renamed Evacuation Centers (EC) and will be referred to as such in this Volume. References to

\textsuperscript{16} Performance Indicators should be SMART, i.e Specific; Measurable; Achievable; Realistic; Timely
\textsuperscript{17} Reported on www.tvnz.com.nz, April 3 2006
the overall institutional issues of emergency management will only be mentioned as and when relevant to ECs.

2. Assessment

a. Legislation, Regulations, Policy and Planning

358. The *Hurricane Act (1973)* is currently the only legislation that addresses disasters. This legislation is out of date and does not satisfactorily address risk reduction or preparedness.

359. The draft Disaster Risk Management (DRM) Plan and supporting legislation in the form of a draft DRM Bill prepared under the first component of this TA is proposed to replace the current National Plan and the existing legislation. The legislation and plan are the result of extensive consultation and are currently with Crown Law. Their preparation and ratification are a critical step in the development of an appropriate organizational structure and arrangements to oversee policy, strategy and programmes in disaster risk reduction and disaster management in the Cook Islands.

360. The DRM Plan sets out the machinery to give effect to the Bill. Cabinet has, in the absence of any current framework for multi-agency responses to emergencies, approved the establishment of Emergency Management Cook Islands (EMCI) within the OPM. EMCI reports to the National Disaster Risk Management Council (NDRMC) whose membership includes government, civil society and private sector representatives.

b. Evacuation Centers

361. ECs have always been located in schools and local community centers. After the six cyclones of 2005, the Ministry of Education (MOE) requested that alternative arrangements be made for ECs in the belief that children would be safer attending school and out of the way of falling debris and big machinery during the post natural disaster cleanup exercise.

362. It is also believed that schools do not have the appropriate cooking, water, communication and sanitation facilities appropriate for the accommodation of many people for extended periods of time.

363. The Master Plan includes projects to ensure that, in the event of a disaster, ECs have adequate water, sanitation, back-up power generation, and communication facilities.

c. Financing

364. There is no process in place for annual physical audits and ongoing maintenance
of ECs. Such audits are essential to ensure that buildings meet safety requirements as specified under the revised Building Code and that water, sanitation, power and communications facilities meet required standards. At the same time dedicated funding must be available to bring ECs not meeting requirements up to standard.

365. The DRM has provisions for the preparation of individual Island Disaster Risk Management Plans. It also provides for the establishment of a group comprising the Mayor, Police, Island Council, IA and various other community, civil society, and private sector representatives to implement and enforce the plan. However there are no provisions for physical and financial responsibility for the operations and maintenance of ECs.

3. Consideration of Alternatives

366. The agencies currently involved in the maintenance of ECs are CIIC (for Government-owned buildings) and communities or Island Councils (for community halls). While Government does not own community halls, these are nonetheless identified as ECs. Government has a social responsibility to ensure that they are provided with the required facilities.

367. Decisions need to be made as to which government agency or agencies will be responsible for, and appropriately funded, to undertake, annual physical audits and the follow-up repairs and maintenance of ECs prior to the cyclone season.

4. Recommendations

368. The following are generic recommendations regarding activities that should be part of an accepted annual process. The nomination of the specific agencies responsible for the discharge of these activities in Rarotonga and the OI is a not a decision that can be made by this TA.

(i) A basic minimum set of standards for ECs be developed
(ii) Annual funding for audits and EC O&M be an annual appropriation to say MFEM or CIIC;
(iii) Audits similar to those conducted on airstrips to be conducted annually on all ECs;
(iv) The Audit be outsourced to public agencies or private contractors;
(v) Audit reports for the ECs to be presented to the Council.
(vi) The Council to prepare and approve budget and direct the release of funding to the responsible agency;
(vii) The responsible agency to outsource the approved repairs and maintenance works to be carried out to public agencies or private contractors;
(viii) All annual repairs and maintenance works are to be carried out before the cyclone season to ensure that ECs meet required standards.
VI. SUMMARY AND CONCLUSIONS

Q. Introduction

369. Government is faced with the constraints of limited resources and technical skills and a small population spread over a wide geographical area.

370. Strategies suggested to address these constraints are based on the following philosophy:

- Well resourced agencies responsible for the functions of: policy and planning; implementation (engineering and construction); operations and maintenance; and monitoring and enforcement;
- The establishment of pools of technical skills in government or technical ministries with funds available to provide fly-in services to the OIs as needed;
- Outsourcing of design, construction, operations and maintenance of works to either government agencies or the private sector;
- Key agencies such as AMD and OMIA having the funds to outsource works to other government agencies or the private sector on a fee-for-service basis;

371. The strategic approach is based on the assumption that Government will:

- Develop and put in place an effective and realistic economic development strategy;
- Develop sectoral policies that are instructed by and support the national economic strategy;
- Develop, maintain and enforce an effective system for monitoring and evaluating performance;
- Develop and implement a policy for outsourcing and create a stable enabling environment for its achievement;
- Pursue policies to build up private sector capacity so as to maximize their involvement in the construction, operation and maintenance of infrastructure;
- Invest in capacity building so as to achieve medium and long term targets.

R. A National Economic Development Strategy (NEDS)

372. Since the meltdown of the early 1990s, good financial management and discipline have brought fiscal stability to the economy. This has not been matched with the development of a National Economic Development Strategy (NEDS) based on economic realities and social priorities. The lack of a realistic economic strategy hampers the development of genuine policy and the translation of that policy into business and action plans with achievable targets. It is recommended that Government develop a capacity to provide guidance and leadership in the development of a NEDS
and subsequent sector policies. The approach suggested in the Master Plan is the strengthening of OPM through the development of a Policy and Planning Unit which would then initiate and support the development of a NEDS, support sector policies and establish a monitoring and evaluation process. The structure for the proposed Unit is shown below.

Figure 12: Proposed Structure for a Policy and Planning Unit

![Proposed Structure for a Policy and Planning Unit](image)

S. Project Implementation

373. Government is concerned with the inability of its institutions to: manage and disburse disaster recovery funds; develop projects that meet national, international or bilateral donor criteria in a timely fashion; implement a project cycle; and achieve a high rate of project completion. Cabinet, as late as mid October 2006, instructed PSC and MFEM to put in place a well-resourced institutional structure to ensure development projects were developed, implemented and completed in a timely fashion. The consensus is that a short- to medium-term solution (5-6 years) is required and that this could be achieved by strengthening one section of government within a central agency; preferably within MFEM. AMD has been identified as the most appropriate section for immediate strengthening.

374. A project development cycle built around the robust and transparent procedures developed for DPA will, (with minor additions to meet loan covenants) be used for the development and implementation of all projects.

375. Project implementation will be managed through the appointment of capable Government organizations as Implementing Agencies\(^\text{18}\). It is expected that the Implementing Agencies will need to supplement their capacity by engaging consultants

\(^{18}\) Refer to Figure 3.
to undertake project management, feasibility studies, engineering designs and cost estimates, tender document preparation, tender evaluation and construction supervision.

376. The structure for the proposed strengthening of AMD is shown below.

**Figure 13: Proposed Structure for a strengthened Aid Management Division**

![Proposed Structure Diagram]

T. Management and Maintenance of Outer Islands Infrastructure

377. OMIA or, more correctly, its predecessor the Ministry for Outer Islands Development (MOID), was established to facilitate the devolution process from the central government to the OIs. It was also intended to provide support and advice to the Island Councils and Island Administrations on governance, financial management and infrastructure development and operations and maintenance. IAs are unanimous in their praise of, and continued need for, the corporate assistance and support provided by OMIA. Its lack of technical skills however has resulted in OMIA no longer being directly involved in infrastructure development and O&M, other than the overhauling of electrical generators. Government should improve the utilization of its scarce technical resources by providing central support to the IAs using the existing resources in MOW and TAU on a fee-for-service basis. In keeping with its successful corporate services role, OMIA would act as the expeditor and contact between the OIs and the technical agencies. IAs will remain responsible, with OMIA assistance, for managing their own technical staff and budgets. MFEM would need to be party to advanced agreements on the expected work and the budgets required by each OI so that central agencies could plan their OI support programmes. It is recommended that the overhauling of OI generation equipment be contracted to the private sector and that CIIC assist OMIA in undertaking a due diligence of the assets of the workshop with a view to their lease or sale. A revised
structure for OMIA, consistent with its proposed roles, is shown below.

**Figure 14: Proposed OMIA Structure**

378. The principle of OIs being responsible, within the constraints of their capacities, for the planning, construction, operation and maintenance of island infrastructure is central to the institutional arrangements recommended. While utilizing the skills of centralized technical staff, OIs must at the same time build their own capacity to manage and maintain infrastructure. While up-skilling courses continue to build OI capacity they remain a short term solution and OI staff need to be provided with opportunities to access accredited training and qualifications. To enable them to operate effectively, IA and visiting skilled staff need adequate, functioning tools and facilities. Machinery, for example, needs to be protected. The Master Plan includes the provision of tools and the refurbishing of existing workshops and construction of new workshops for islands that do not have such facilities. The vision is one of incremental improvement of the OIs ability to develop and manage their planning, budgets, and projects.

U. Private Sector Participation

379. There is a widely held belief in both government and civil society that maximizing private sector participation in the construction, operation and maintenance of infrastructure will provide increased efficiencies and improved and more sustainable levels of services. Because of its relatively small base, the private sector may not possess the full range of skills and competencies required to carry out all the works contained in the Master Plan. However, locally owned companies have the capacity to leverage the required skills and expertise through partnerships with overseas companies. There is widespread concern within the community that the sale of essential
services to the private sector would lead to unacceptable monopolies and increases in pricing. There is a need for commercially attractive and consistent Government policy including longer term supply and maintenance contracts. Government agencies must refrain from providing competing services that crowd out the private sector.

V. Legislation and Regulations

380. Outdated and inappropriate legislation and the inability for new legislation and regulations to be developed and approved in a timely fashion are identified by stakeholders as important cross-sector constraints. Two important issues contribute to the current difficulties.

381. Firstly there is a critical shortage of legislative drafting skills both within Crown Law and in government. Secondly most recent drafting has been undertaken by overseas experts who are characterized, fairly or unfairly, as not being familiar with, or having sensitivity to, local ways and conditions. Many of the pieces of draft legislation are therefore viewed as being imported from other countries and lacking local input which would insufficiently adapt them to local needs. Most likely however it is the process of drafting legislation and regulations that has contributed most to the current unsatisfactory situation. Limited time and a lack of wide-ranging and timely local comment results in drafts that are usually not fully digested until after the consultant has left. TA contracts for legislative and regulatory development should take the realities of local participation into consideration and allow for sufficient time between the development of drafts and re-drafts for the inevitable lengthy response times of local institutions.

W. Land

382. Land issues are central to all infrastructure sectors and are identified by government as potentially the most costly constraint. The Crown has the right to ‘expropriate’ land by warrant either in perpetuity or for a limited period. The use of this process is anathema to the current custodians of traditional land. The accepted process is for negotiation to be undertaken with landowners (made easier if the land is registered and the Registers are up-to-date) or with customary chiefs, leaders and the community in cases where land is not surveyed and registered. While the difficulties, costs and time associated with land acquisition and permission for usage should not be underestimated, timely identification of land requirements is an essential starting point. Careful planning, well conducted social and economic surveys and broad-based culturally sensitive consultations such as those required for ADB funded projects will contribute to successful outcomes.

X. Municipal Services

383. The protection of water resources (a term used here to include lagoon, surface and ground water) is perhaps the most important economic and social issue facing the
Cook Islands. The situation today has been likened to sitting on a time bomb, with disastrous consequences that could drive the country into economic and social regression. Yet the water, sanitation and solid waste sectors are fragmented and supply-driven and are lacking in coherent policies, strategies, legislation, regulation and monitoring.

384. Three options have been proposed for the institutional future of municipal services. One of the options is, in the opinion of this TA, most favorable. However making firm institutional recommendations at this time is likely to be highly contentious and beyond the scope of this TA.

385. The preferred option would see the three sectors maintaining the status quo and ceasing policy and regulatory work in the sector until such time as a NEDS is approved. Government would then, on completion of the NEDS, undertake a comprehensive sector-wide review with a view to developing consolidated policy and regulations, reducing duplication, consolidating capacity and incorporating international experience.

386. The doubtful validity of many of the indicators in the business plans of the three sectors and the nature of associated targets are a reflection of the ineffective management regimes, lack of clear ownership of policies and planning or regulation at the national level; and the absence of a realistic vision for the future with associated economic and social goals. It is expected that OPM will provide leadership in the development of a consolidated municipal services policy. OPM will then be able to assist in the development of business and action plans with SMART indicators, reliable baseline data and realistic targets.

387. Until such time as Government develops its NEDS and government stakeholders take ownership and display a willingness to undertake responsibility and reduce fragmentation there is little hope of formulating, adopting and implementing a national policy for the management of water resources.

388. Laboratory services are integral to the monitoring of water resources. Again several options have been discussed. The preferred option would see Government establish a central testing facility for all environmental testing in conjunction with, and under the management of, the existing MOH laboratory. Donor funding would be required to equip such an institution and provide the training for staff. Government would need to fund the technical staff and the ongoing O&M costs.

Y. Air Transport Services

389. Government will commission a transport policy review immediately after the development of a NEDS. OPM will assist MOT in the development of the transport policy and the monitoring of performance against a suite of valid indicators that measure the sector’s efficiency and effectiveness.

390. There will be a staged transfer of responsibilities for OI airpports to CIAA. On

19 Ibid
taking over the responsibilities of an OI airport, CIAA will enter into contractual arrangements with IAs to manage and operate the airport. CIAA will train IA staff as airport managers and safety officers. CIAA will also provide training on equipment operation and airstrip maintenance.

391. CIAA will take over responsibilities for Penrhyn, Manihiki and Atiu airports after upgrading has taken place and they are Part 139 certified, and financial and administrative agreements have been reached with Government and IAs. MOT will undertake the training of local inspectors for Part 139 certification and will develop Operations Manuals for Part 139 airports. Other airports will be taken over only after land leasing and licensing agreements are reached with landowners and financial and administrative arrangements are reached with Government and IAs.

Z. Marine Transport Services

392. Government will commission a transport policy review. OPM will assist MOT in the development of the transport policy and in monitoring performance against a suite of valid indicators that measure the sector’s efficiency and effectiveness.

393. PDU will be the executing agency for the upgrading and commissioning of OI harbors. As such, PDU would be responsible for the prioritization and inclusion of projects in works programme and the appointment of the implementing agent for each project.

394. CIIC to undertake a due diligence study of CIPA to ascertain the true value of activities and assets of the Avatiu and Aitutaki port facilities with a view to:

- contracting longshoreman and security activities to the private sector;
- deliberating the case for leasing the operations and management of the ports to the private sector.

AA. Roads

395. Government will commission a review of the road sector immediately after the development of a NEDS. The review will include a cost study on all aspects of road construction and maintenance. The outputs of the review will be a national strategy for road development and maintenance and an analysis of the potential areas of increased private sector participation. OPM will assist MOW in the development of the national strategy and business and action plans with indicators, baseline data and targets that are realistic and capable of providing valid information.

396. The strategic planning, road planning, traffic management and contract management capacity of MOW will be developed so that MOW will, in turn, assist the OIs with strategic planning and the design of proposed works.

397. MOWs and IAs capacity to develop and manage contracts and supervise contractors will be strengthened along with operational efficiency and application of financial controls. CIIC will assist MOW and IAs to implement increased private sector
participation based on the recommendations of a cost study. OMIA will continue to act as a liaison point for OIs engaging MOW and increasingly the private sector to provide assistance.

398. The Department of Police and MOT will coordinate with the Ministry for Education and civil society organizations to mainstream road safety education and awareness at the secondary school level, provide driver training and raise public awareness.

399. PDU and MOW will develop TORs and tender documents for the engagement of a consultant to provide MOW with a capacity for road planning and traffic management.

BB. Energy

400. Government will commission a review of the NEP immediately after the development of a NEDS. The review will include a cost recovery study that will inform tariff setting on Rarotonga and the OIs as well as the development of policies relating to OI cost subsidization.

401. The Energy Division of MOW will be allocated its own annual budget and enter into strategic partnerships with international institutions such as universities to pursue research in sustainable local alternative energy sources.

402. A technical committee to evaluate and advise on alternative energy options and strategies and decrease the reliance on fossil fuels will be established. Representatives from relevant government agencies, the private sector, and civil society will be invited to participate on the committee.

403. A demand management and safety awareness campaign will be undertaken in both English and Maori.

404. PDU will develop an urgent project to contract TAU to undertake a safety audit of all OIs (other than Aitutaki) electrical generation and distribution systems and undertake works necessary to ensure that all OI generation and distribution systems meet accepted safety standards.

405. Funds will be made available on an annual basis for TAU to be contracted to undertake the maintenance of standards and safety of generation and distribution of electricity in OIs on a fee-for-service basis. Staff from TAU will make at least two visits a year to each OI. TAU will, where appropriate, contract the private sector to undertake work on its behalf in the OIs.

406. The overhauling of OI generation equipment will be contracted to the private sector and CIIC will assist OMIA in undertaking a due diligence of the assets of the workshop with a view to their lease or sale.

407. A comprehensive programme will be introduced to develop the capacity of energy staff on the OIs including: continued on-island and Rarotonga based up-skilling programs for IA staff; a long term strategy through the school star programme to attract students to the sector and, in the short-term, the engagement of regional low cost
electricians.

408. OMIA’s role in the energy sector will change to one of a liaison function between IAs, TAU and the national ED. TAU and OMIA will nominate staff and develop liaison procedures and an MOU will be signed by TAU, OMIA (on behalf of IAs) and MFEM.

CC. Telecommunications and Media

409. Telecommunications services are provided by a private company and as such no institutional analysis and recommendations will be made by this TA. It is reported that TCI’s current monopoly agreements with government are due to expire and that negotiations for extension of the arrangements are underway. Undoubtedly Government will be considering the effects to both consumers and its own budget before deciding between continuing the monopoly or opening the network to other providers.

DD. Evacuation Centers

410. The Master Plan contains several projects to build new ECs and upgrade existing ECs. There is no process in place for allocation of responsibility or funding to annual physical audits and the ongoing maintenance of EC. This TA will not make recommendations as to which Government institution or institutions should have responsibility for undertaking annual physical audits and maintenance of ECs. Recommendations are made however for the institution of a generic process to ensure that ECs are maintained to a satisfactory standard. The most important of these recommendations is the annual appropriation of funding to enable the undertaking of physical audits of ECs and for their repair and maintenance.