Prepared for

NEW ZEALAND FOREIGN AFFAIRS & TRADE

Aid Programme

Infrastructure in the Pacific: Learnings from Completed Investments 2004-2013

NOVEMBER 2015

MWH

BUILDING A BETTER WORLD

MWH New Zealand is part of MWH Global which employs more than 7,000 experts including engineers, consultants and construction professionals globally. As specialists in water, natural resources and transportation, MWH employees use innovative ideas and technology to solve complex infrastructure and environmental challenges. MWH is *Building a Better World*.

Authors: P. White, A. Bird, P. Ferguson, and B. Trangmar

Contents

Abbreviations

ACA	Activity Completion Assessment
ADB	Asian Development Bank
AusAID	Australian Agency for International Development (prior to 2014)
CBA	Cost Benefit Analysis
CIGov	Cook Islands Government
DAC	Development Assistance Committee, Organisation for Economic Co-operation and Development
DFAT	Department of Foreign Affairs and Trade, Australia (since2014)
DPA	Development Partnership Arrangement
EIA	Environmental Impact Assessment
EMC	Emergency Management Committee, Niue
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
EU	European Union
GGH	Gough, Gough and Hamer
IC	Infrastructure Committee, Cook Islands
IEE	Initial Environmental Examination
IPSA	Initial Poverty and Social Assessment
IRR	Internal Rate of Return
JICA	Japan International Cooperation Agency
LBES	Labour Based, Equipment Supplied
MID	Ministry of Infrastructure and Development, Solomon Islands
MFAT	Ministry of Foreign Affairs and Trade, New Zealand
MNRE	Ministry of Natural Resources and Environment, Tonga
MOIP	Ministry of Infrastructure and Planning, Cook Islands
MOU	Memorandum of Understanding
NTF	National Transport Fund, Solomon Islands
NTP	National Transport Plan, Solomon Islands
NZ	New Zealand
NZAID	New Zealand Agency for International Development (prior to 2009)

NZDS	New Zealand Defence Service
NZS	New Zealand Standard
O&M	Operation and Maintenance
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
OMIA	Office of Minister for Islands Administrations, Cook Islands
PCC	Project Coordinating Committee, Cook Islands
PCERP	Post-Conflict Emergency Rehabilitation Project, Solomon Islands
PMCBU	Project Management and Capacity Building Unit, Solomon Islands
PPTA	Project Preparation Technical Assistance
PRIF	Pacific Regional Infrastructure Committee
RFP	Request for Proposal
SCADA	Supervisory Control and Data Acquisition
SIRIP1 and 2	Solomon Islands Road Improvement Project 1 and 2
WB	The World Bank

Abstract

Selected infrastructure investments completed between 2004-2013 by the New Zealand Ministry of Foreign Affairs and Trade (MFAT) were evaluated. The purpose of the evaluation is to independently inform MFAT of improvements that can be made within current infrastructure investments in the Pacific and lessons learned that can be applied to energy and non-energy Activities. Four Activities were evaluated, in the Solomon Islands, Cook Islands, Tonga and Niue. Extensive document review and stakeholder interviews of these Activities were undertaken to inform the evaluation. General evaluations of infrastructure projects in the Pacific and elsewhere were also reviewed. These reviews and interviews formed the basis of the evidence for the evaluation. A number of key findings were identified covering the topics of Planning, Management, Design, Effective Capacity Building, Maintenance and Crosscutting Issues. The findings showed a number of consistent themes that will be useful for the MFAT to learn from in the future. These lessons have been documented so that they can be applied to future infrastructure investments, and to guide evaluation for renewable energy Activities. Their incorporation in future project designs and results frameworks will be critical to this. For MFAT to successfully implement the lessons learned, a number of key recommendations and 'next steps' have been made. The implementation of these key recommendations will result in better project design and more successful outputs and outcomes that satisfy the Development Assistance Committee criteria.

Executive Summary

The New Zealand Aid Programme, Ministry of Foreign Affairs and Trade (MFAT) has identified infrastructure investments as one of the enablers of growth, with renewable energy as one of the key underpinnings of the Aid Programme's growth strategy (MFAT March 2011).

MFAT has commissioned a two-stage evaluation of infrastructure Activities in the Pacific to:

- Identify lessons learned from past infrastructure investments on what worked or didn't work, and why? These investments targeted land transport; maritime transport; water, sanitation and hygiene; solid waste management; and energy (Stage One).
- Evaluate the Activity planning and management (in concept, design, implementation and completion phases) of the MFAT renewable energy Activities (Stage Two).

This Report covers evaluation of completed infrastructure. Evaluation of completed infrastructure involved document review and interviews with key stakeholders, and focussed on four established or completed Activities in the Pacific. It also included review of infrastructure evaluations of other donor agencies, other MFAT evaluations, and other relevant documentation.

The evaluation of completed infrastructure focussed on four Activities (Appendix 1 of this report), that were diverse in their technical scope and unique in the circumstances that applied to them:

- Solomon Islands Road Improvement Programme (SIRIP) (2007-2013) / Post Conflict Emergency Reconstruction (roads and bridges) (PCERP) (2006-2008) (Transport) with the Asian Development Bank (ADB) and Department of Foreign Affairs and Trade (DFAT) – a large and successful programme of works to upgrade the main roads and bridges, designed as part of the recovery from the impacts of a conflict period in the Solomon Islands.
- Development Partnership Arrangement (DPA) for Cook Islands Outer Islands. Development Infrastructure Construction and Upgrade (2005-2008) – this was a framework process for infrastructure project decision making (management protocols, programme planning, project selection and implementation) to overcome problems arising from the absence of clear processes and responsibilities in the Cook Islands, under which 11 separate Activities were completed.
- Tonga (Popua) Dump Site Rehabilitation (2004-2008) (Solid waste) – a defined task for closure and remediation of an old refuse dump site on Tongatapu.
- Niue Power Station Rebuild (2006-2008) (Energy) – an emergency response for rebuilding the diesel power generator on Niue following a fire and equipment breakdown which impacted the whole community.

Key Findings and Lessons Learned

The key findings of the evaluation (Report Section 2) and lessons learned (Report Section 4) in response to the key evaluation questions are:

What is good practice?

- A guiding country infrastructure strategy belonging to the aid recipient is needed to prioritise infrastructure investment to get the best outcomes and impacts, and aid in resource allocation for the recipient and donors.
- Good coordination with and among donors improves outcomes, and poor coordination undermines outcomes – this applies to coordination between donors and coordination of donors by recipient governments.
- Adherence to good project processes improves outcomes – key elements are strong leadership and management, ownership by stakeholders, effective secretariat or project management unit, clear and logical roles, and supported oversight committees.
- There is not a best procurement modality for all situations and modalities may be adopted to suit the specific situation. There are advantages in each approach and disadvantages that need to be mitigated.
- Project design practices need to take in the big picture by identifying linked projects and separate needs triggered by the outcomes of the core project.
- Involving stakeholders in design improves outputs and outcomes – this takes time and is sometimes limited for expediency where there are time constraints or in an emergency response.

What could have been done better?

- Detailed financial and economic analysis on the MFAT-led Activities would lead to better development outcomes for both the recipient Government and the beneficiaries.
- MFAT's focus on infrastructure construction and limited maintenance support practices may affect the long term impact of infrastructure investment – greater support in ongoing maintenance would improve outcomes and sustainability.
- More effective provision for maintenance is needed for infrastructure investment to be sustainable – including addressing financial constraints, establishing accountability and incentives, building capacity and better focus on practical maintenance methods in infrastructure design and construction.
- Better matching of project design to in-country capability and capacity and effective long term capability/capacity building would improve long term outcomes and sustainability – in-country capability and capacity needs to be realistically assessed and appropriate responses included in the project design.

What lessons can be applied elsewhere?

- Lessons are transferable but need to be interpreted and adapted to recognise differences in cultural, social, political and environmental condition.

How have cross cutting themes been addressed?

- Climate change, environmental impacts, human rights and gender aspects have been addressed on an ad hoc basis in each of the four Activities – this reflects the diverse nature of the infrastructure Activities in the evaluation, but also reflects an inconsistent approach to good practice by MFAT. It is noted that these Activities preceded MFAT's 2011 strategy to strengthen the integration of cross cutting issues.

- Activity outcomes were more beneficial to communities and the environment where cross cutting issues were addressed early and integrated into the project design, were monitored by MFAT or other donors, and leveraged through contractual agreements.
- Activities were more likely to have adverse social and environmental impacts when the issues (such as land access) were excluded from the Activity, and / or no ongoing mitigation and monitoring followed Activity closure.

Recommendations

The following actions are recommended (see Section 5 for more detail):

Infrastructure Planning

1. Each country should have a national infrastructure plan or strategy to guide infrastructure investments (responsibility of recipient country government, MFAT).

Procurement

2. Procurement modalities for each Activity should be adopted to fit the specific circumstances of the Activity, institutional structure and local capacity (MFAT).

Community Involvement

3. Beneficiary communities and other stakeholders impacted by the infrastructure should be consulted from the beginning of the Activity design process following an agreed Communications Plan (implementing agency, MFAT).

Financial / Economic Analysis

4. MFAT should require a complete financial and economic analysis for all Activities (MFAT).

Capability and Capacity Building

5. A full capability and capacity analysis should be undertaken at the start of each Activity to identify skill and resource gaps and the capacity building inputs needed to implement the infrastructure programme (MFAT).

Effective Provision for Maintenance

6. Greater emphasis should be given to good asset maintenance and factored into Activity design, with consideration given to post-construction phase support of asset management (MFAT).

Transfer of Successful Practices

7. Transfer of successful practices into a new situation must be carefully planned to adapt to the new geography, climate change, institutional and community, social and cultural, land tenure, capability and capacity factors (MFAT).

Management of Cross Cutting Issues

8. Mechanisms should be included in formal documents with provision for adequate supervision and monitoring by MFAT to provide incentives and leverage to achieve cross cutting outcomes in infrastructure Activities (recipient government, implementing agencies, MFAT).

9. Management of ongoing cross cutting issues (after Activity closure) should be operationalised into the implementing agency's asset management plans, design manuals, and other institutional policies and procedures (implementing agency, MFAT).

10. In-country and MFAT requirements for Environmental Impact Assessments should be harmonised where possible to ensure all donor and recipient country requirements are met effectively and efficiently (recipient government, MFAT).

11. Resolution of land issues should begin at the start of the Activity and adequate time given in the programme for resolving such issues and / or access to resources) before construction starts (implementing agency, MFAT).

1. Background

1.1 The Activity

The New Zealand Aid Programme, Ministry of Foreign Affairs and Trade (MFAT) has identified infrastructure investments as one of the enablers of growth. Of these infrastructure investments, renewable energy is seen as one of the key underpinnings of the New Zealand Aid Programme's growth strategy. Introducing clean and affordable energy technologies is a high priority for the Pacific region and this is reflected in MFAT's Energy Sector Priorities. Expected outcomes from these initiatives include: sustainable energy and reduced reliance on imported fuels; and increased numbers of people with access to clean, reliable and affordable energy services.

The Terms of Reference for this evaluation are:

- Completed infrastructure (Stage One) - identify lessons learned from past infrastructure investments on what worked or didn't work, and why. MFAT targeted the following infrastructure sub-sectors as part of this feasibility study: land transport; maritime transport; water, sanitation and hygiene; solid waste management; energy.
- Renewable energy (Stage Two) - evaluate the Activity planning and management (covering concept, design, implementation and completion phases) of the MFAT renewable energy Activities to improve performance and for learnings that can be applied to other energy and non-energy Activities in the Pacific and potentially elsewhere in the world.

This Report covers the evaluation of completed infrastructure investments.

1.2 Evaluation Purpose and Design

1.2.1 Purpose

The purpose of this evaluation is to independently inform MFAT of improvements that can be made within current infrastructure investments in the Pacific and lessons learned that can be applied to energy and non-energy Activities. The evaluation will also be used to underpin future infrastructure investment decision-making.

The objectives of the evaluation are to:

1. Identify lessons and examples of good practice from past infrastructure investments to help MFAT make better decisions when designing and implementing future infrastructure Activities
2. Assess whether lessons learned are being applied to current or new renewable energy Activities
3. Identify lessons learned from the design, implementation and management of current renewable energy Activities
4. Develop an overarching results framework including a monitoring and evaluation plan, for current and future renewable energy infrastructure Activities.

Objective 1 is the subject of the evaluation of completed infrastructure described in this Report. It is based on review of the four Activities identified in the Terms of Reference for this evaluation in the Solomon Islands, Cook Islands, Tonga and Niue, and general infrastructure evaluation reports for the Pacific and elsewhere. This forms the starting point for Objectives 2-4 that are the subject of Stage Two of the evaluation, which is to be based on four renewable energy projects in Tokelau, Tonga, Samoa and the Cook Islands.

1.2.2 Scope

The evaluation of completed infrastructure builds on the joint Australian Department of Foreign Affairs and Trade (DFAT) / MFAT feasibility study document review[1], which was completed in June 2014. It focusses on the following completed Activities identified in the Terms of Reference:

- Solomon Islands Road Improvement Project (SIRIP) (2007-2013) / Post Conflict Emergency Reconstruction Project (PCERP) (2006-2008) (roads and bridges) (Transport) with the ADB and DFAT – new road infrastructure constructed as part of recovery from the impacts of a period of conflict in the Solomon Islands
- Development Partnership Arrangement (DPA) for Cook Islands Outer Islands Development Infrastructure Construction and Upgrade (2005-2008) - a framework for process for decision making (management protocols, programme planning, project selection and implementation) under which 11 separate Activities were completed
- Tonga (Popua) Dumpsite Rehabilitation (2004-2008) (Solid waste) – closure and remediation of an old refuse dump site in Tongatapu
- Niue Power Station Rebuild (2006-2008) (Energy) – rebuilding the Niue Power Station after major damage in a fire.

A summary of the nature and scope for each of the four Activities is in Appendix 1. The expenditure on each is given in the table below. A summary of project expenditure is given below.

[1] DFAT and MFAT jointly commissioned the Overseas Development Institute (ODI), in collaboration with The Methods Lab, to undertake the feasibility study. This was completed in June 2014.

Project and Country Statistics

Project	Duration	Cost	Partner / Amount	Country Population	GDP/capita (USD)
Solomon Islands Road Improvement (SIRIP)	2007-13	US$21.375 m	ADB US$0.35 m AusAID US$9.06 m MFAT US$10.34 m SI Govt US$1,62 m	523,000 (2009)	$3,191 (2011)
Post Conflict Emergency Reconstruction Project (PCERP)	2006-08	US$21.28 m	ADB US$11.56 m AusAID US$2.00 m MFAT US$6.50 m SI Govt US$1.22 m		
Development Partnership Arrangement (DPA) for Cook Islands Outer Islands Development Infrastructure Construction and Upgrade	2005-08	NZ$6.0 m	MFAT NZ$5.0 m AusAID NZ$1.0 m	19,569 (2006)	$9,100 (2005)
Tonga (Popua) Dumpsite Rehabilitation	2004-08	NZ$2.1 m	MFAT NZ$2.1 m	103,036 (2011)	$7,344 (2011)
Niue Power Station Rebuild	2006-08	NZ$2.0 m	MFAT NZ$2.0 m	1,611 (2011)	$6,207 (2011)

1.2.3 Design

A mixed methodology approach was taken to reviewing the projects and data collection for the selected completed infrastructure. This comprised document review (MFAT and other donors), meetings with relevant MFAT staff, and interviews with national stakeholders and other donor staff.

This evaluation involved document review and interviews with key stakeholders, focussed on the four completed Activities identified in the Terms of Reference. It also included review of infrastructure evaluations from other aid agencies, other MFAT energy and non-energy evaluations, and other relevant documentation. A list of the documents reviewed is given in Appendix 2.

Interviews with key stakeholders were also undertaken to better understand what worked and did not work, and why, including the benefits and challenges with co-funding of infrastructure investments. These interviews were conducted face-to-face where possible (generally limited to available MFAT staff in Wellington) or by phone or video-conference where the interviewees were more remote. The interviewees included MFAT staff relevant to

the projects, including at post, national ministries, and other donors (such as the ADB, AusAID). A list of the people interviewed is in Appendix 3.

In accordance with the intent of the Terms of Reference, the interviews on the completed infrastructure Activities were more limited than those proposed for the renewable energy Activities (Stage Two). The evaluation of completed infrastructure built on the feasibility study that was commissioned earlier in 2014 by DFAT and MFAT. The interviews were to provide context to the document review for the completed infrastructure evaluation.

Detailed information on the evaluation design is contained in the Evaluation Plan (MWH 2014).

2. Overarching Findings

The four Activities evaluated are diverse in their technical scope, and unique in the circumstances that applied:

- SIRIP / PCERP was a large and successful programme of works to rehabilitate the main roads and bridges, designed in response to circumstances following a period of conflict - MFAT provided part of the funding to SIRIP as well as to expansion of the associated PCERP that had commenced in 2000. This report uses the name SIRIP to refer to this Activity, as per MFAT documentation for the Activity.
- Cook Islands Development Partnership Arrangement (DPA) was a framework for process for decision making (management protocols, programme planning, project selection and implementation) on key infrastructure investments in outer islands to overcome the problems arising from the absence of clear processes and responsibilities in the Cook Islands.
- Tonga (Popua) Dumpsite Rehabilitation was a defined task for closure of a dump site on Tongatapu.
- Niue Power Station Rebuild entailed emergency response and rebuilding the diesel power generator / generation following an emergency event (fire causing equipment breakdown) impacting the whole Niue community.

The findings for the evaluation of completed infrastructure have been grouped below under the Development Assistance Committee (DAC) Criteria for Evaluating Development Assistance (OECD DAC 1991).

2.1 Relevance

Relevance refers to the extent to which aid activities are suited to priorities and policies of target group, recipient and donor (OECD DAC 1991).

2.1.1 Guiding Priorities for Infrastructure Investment

The SIRIP and Cook Islands DPA Activities illustrate the benefits of working within a guiding strategy for infrastructure investment, while the Popua Dumpsite Rehabilitation and Niue Power Station Rebuild Activities were reactive in response to specific needs. In many cases there are identifiable limitations on the capacity of communities and governments to successfully manage all development activities. Different activities all compete for the same resources. Good prioritisation of activities according to transparent criteria is therefore crucial to the success of development initiatives.

SIRIP

The Solomon Islands National Transport Plan (NTP) was first adopted in 2006, just prior to the commencement of SIRIP. As part of an update in 2010, a new prioritisation methodology was developed to guide the development of future annual programmes for the sector.

The NTP sets out the key policy objectives for the sector, closely based upon the wider economic and social objectives expressed in a number of Government documents. It

identifies broad priorities for investment in the sector, including prioritised lists of infrastructure maintenance, rehabilitation and expansion projects. The findings of the NTP provided broad priorities by location and indicative subprojects and were used to identify the scope of the project (ODI, 2014a). The National Transport Fund (NTF) funds the NTP. Donors pool funds into NTF (ADB, DFAT, World Bank, Ministry of Infrastructure and Development (MID)) in a sector-wide approach for transport. The NTP now focuses on operation and maintenance. SIRIP had project budgets for construction, and separate budgets to run MID. These are now all brought into one budget in alignment with NTP. The New Zealand Aid Programme provided major funding ($15 million) for SIRIP1, SIRIP2 and PCERP, but does not contribute to the NTF for operation and maintenance, and ongoing capacity building. Annual work plans and funding are set to meet the priorities in the NTP. Criteria were specified to determine priorities for subproject selection to be funded, and projects were selected according to those criteria.

Cook Islands DPA

Instigation for the Cook Islands DPA came from the Office of the Minister for Islands Administration (OMIA), seeking to establish a system to plan and prioritise projects. The DPA was then developed in a workshop with stakeholder agencies, and the structure reflected the views of the stakeholders and the nominal responsibilities of each party.[2]

The DPA outlined simplified and streamlined processes for decision making; management protocols; programme planning; project selection; and implementation for jointly funded MFAT and AusAID infrastructure development projects. Peek and Miria-Tairea (2009) report that prior to the DPA,

> *The selection of MFAT funded outer island development projects was ad hoc at best. There was no clearly defined process to determine and prioritise eligible projects resulting in poorly planned implementation. This in turn led to undue pressure being placed on time and budgets. The limitations of working within a one year funding cycle and intermittent design and costing issues further aggravated the situation.*
>
> *Added to this, the practice of the politicians changing their priority list of projects on an ad hoc basis was causing uncertainty and frustration with the implementing agencies.*

The DPA programme adhered to Government strategies and priorities, but it did not always have agreement at the grass roots level / community. There is a need to balance both national priorities and community needs.

2.1.2 Effective Coordination With and Among Donors

Issues associated with coordination between donors and coordination of the in-country agencies with donors is a common theme across development Activities and programmes. Each donor agency has its own strategic plans, policies and procedures, differing from those of other donors. Recipient governments are either unable to ensure the actions of each donor are consistent with other infrastructure or activities, or are reluctant to turn down any

[2] Stakeholder Interview 1

funding source even if it may be inconsistent with other initiatives[3]. Good coordination is clearly not easy to achieve, but it improves outcomes and reduces transaction costs.

Niue Power Station Rebuild

MFAT was the sole donor involved in the Niue Power Station Rebuild Activity.. Coordination between the Niue Government and MFAT was effective because of the strength of the existing relationships and clear understanding of respective roles. There have been issues with coordination of subsequent renewable energy projects undertaken by the European Union (EU) and Japan International cooperation Agency (JICA), where the new infrastructure is built to different technical standards and the new power generation infrastructure cannot be used in the established power grid[4]. This situation is beyond the scope of this evaluation report, but its occurrence highlights a lack of effective coordination of donors and recipient countries to ensure appropriate infrastructure and outcomes.

The other Activities in Tonga, the Cook Islands and Solomon Islands that are considered here show examples of how effective coordination with other donors can be achieved to achieve better development outcomes.

Cook Islands DPA

Prior to the harmonisation through the DPA of the two main donors funding outer islands infrastructure development in the Cook Islands (AusAID and MFAT), AusAID had adopted a turn-key approach following initial consultations, whereas MFAT had adopted a more on-going consultative approach with stakeholders. AusAID focussed on development of water and power supply, while MFAT focussed on harbours, airports, waste and cyclone protection. Peek and Miria-Tairea (2009) reported that the more consultative MFAT approach was less effective in delivering tangible results, and that politicians favoured the AusAID approach because it delivered completed and visible projects far more quickly than the NZAID approach. The joint DPA agreement between Cook Islands, New Zealand and Australia established consistent practice for infrastructure development, along with a process to prioritise projects across the programme of the two donors.

Tonga Dumpsite Rehabilitation

The Tonga Dumpsite Rehabilitation Activity was funded by MFAT but implemented through the AusAID waste management project. At times there were reported delays in gaining approvals for expenditure from a second donor[5], but the various officers involved on behalf of both AusAID and MFAT report that there were no significant issues with donor coordination, and that it was unusually successful in that regard[6]. This was based on very good relationships among the relatively junior MFAT and AusAID post and desk officers. AusAid and MFAT post staff had a practice of making joint decisions on development programmes. They had a common understanding of mechanisms, including planning processes and matrices, even though there were differences in the procedures of the two organisations.

[3] Stakeholder Interview 2
[4] Stakeholder Interview 3
[5] Stakeholder Interview 4
[6] Stakeholder Interviews 4, 5

SIRIP

SIRIP was a joint project between the ADB, AusAID and NZAID. The majority of the financing was from AusAID and NZAID, with the ADB providing only a minor financial contribution. The ADB led the project with MID as the executing agency, at the request of the Solomon Islands Government because of their extensive experience in the transport sector (ODI, 2014a). In 2005 NZAID had implemented very little infrastructure anywhere at that time and the ADB brought much experience to the infrastructure design and contracting. This collaboration was effective, drawing on the experience and management systems that the ADB had in place (including environmental and social safeguards measures) to efficiently run a major project even though they did not provide the bulk of the finance.

This was not without issues arising from the difference in processes between donors, but compromises are sometimes needed to meet other donor requirements. For instance, the ADB economic criteria is perceived as sometimes being too strict for the development situation. In one example, work on wharves on outer islands in the Solomon Islands did not meet the standard Internal Rate of Return (IRR) of 12%; but it is important to get products in / out and transport connectivity is lost without the wharves, affecting the social and economic benefits of the road.[7]

2.1.3 Scoping of Gender, Environment, Climate Change and Human Rights in Activity Identification and Design

The benefits of integrating cross cutting issues into the design of infrastructure projects is well understood and clearly articulated in MFAT policy, strategy and guidance (MFAT 2012). Cross cutting issues are part of the context in which the development Activity occurs, and understanding the context leads to a better designed project. The four projects were designed prior to the Environmental and Social Impacts Operational Policy being adopted by MFAT. While the principles of incorporating human rights, gender equity and equality, and environmental sustainability at the core of good development was understood in the MFAT[8], the findings from the four projects demonstrate that the depth and breadth of understanding was variable and applied in an ad hoc manner.

Good practice requires that the potential adverse cross cutting issues and potential benefits are scoped early in Activity development, and then integrated into design. While MFAT staff have identified that this approach can create delays in project progress at this stage, the purpose is to design projects in an informed way, with good understanding of risks and risk mitigation.

SIRIP

In SIRIP, the environmental and social impacts of the subprojects were scoped in the feasibility stage using the ADB's 'Initial Environmental Examination' (IEE) process and an Initial Poverty and Social Assessment (IPSA). This set up a process for managing environmental and social impacts for each subproject, including a stakeholder communications plan, environmental management plans (EMPs), and identified where capacity was needed in the project management unit for safeguards.

[7] Stakeholder Interview 6
[8] Stakeholder Interview 7

In SIRIP gender issues were integral to project design. To ensure that gender issues and other cross cutting themes were addressed by the implementing agencies for SIRIP two key mechanisms were used:

1) Gender targets were included in the project / results framework
2) IEE, IPSA, EMP and gender issues were included as covenants in the ADB's Grant Agreement and compliance was monitored throughout the project
3) Cross cutting requirements were included in the Contractor's contract.

Tonga Dumpsite Rehabilitation

In the Tonga (Popua) Dumpsite Rehabilitation several scoping reports were commissioned prior to project preparation (Tongan Environmental Planning and Management Strengthening Project, 2000; Hill et al., 2004). This included a social impact assessment commissioned by MFAT that identified the potential loss of livelihoods by squatters deriving income from scavenging waste (Guttenbeil, 2005). While fully informed of the issues, mitigation of this significant social impact on the squatter community was not integrated into project design. The Contractor's landfill closure design documentation only focusses on perceived improvements of social impacts from closure (improved amenity, reduced health risk, etc) (Coffey International Development, 2007). Environmental impacts were considered integral to good landfill closure design and were well scoped and integrated into the project design.

Cook Islands DPA

The Cook Island DPA stated that EIA and consultation were required at the subproject level, at the feasibility stage and the detailed design stage. This is appropriate where there is a program of subprojects that are not well defined at the start (similar to SIRIP). However, there were no standards set and no guidance provided as to the level of rigour required and expectations of methods or outcomes, as part of the DPA. There was no documented process for supervision and monitoring of outcomes.

Niue Power Station Rebuild

In Niue, it appears that cross cutting issues were not analysed, although remedying the electricity supply in a short timeframe was perceived to alleviate social impacts from power outages. It is not well understood whether the removal of damaged equipment for safe disposal was undertaken, or whether environmental management has been integrated into operations and maintenance procedures. These two simple measures would have addressed the most significant potential environmental impacts. The opportunity to address climate change mitigation was not considered due to the overriding importance to replace existing technology at speed.

2.1.4 Suitability of Transfer of Effective Practices

Understanding the extent to which practices can be transferred from one location or situation to another is key to using applicable lessons to inform future Activities. Each of the Activities covered in this report occurred in unique circumstances that may not apply in other situations or locations. However, approaches taken to design and manage the Activities offer guidance to other projects, such as:

- The benefits of community consultation and a good communications plan to the SIRIP project
- The need to resolve land issues early, shown in the SIRIP project

- The benefits of planning maintenance at the start of design shown in the SIRIP project, and conversely
- The importance of good maintenance shown by the damaging fire at the Niue power station
- The need and means to define roles and responsibilities and to set clear expectations shown in the Cook Islands DPA and the Popua Dumpsite Rehabilitation Activities
- The benefits of careful analysis of social issues - strong women's involvement in Labour Based, Equipment Supplied (LBES) road maintenance led to empowerment of women and revenues in the Solomon Islands community
- Paying attention to developing good relationships among stakeholders, and building trust.

Specific technologies may also be transferable. However, the processes by which they are transferred into an existing system and social and cultural context needs to be carefully planned. For example:

- Appropriate maintenance systems like the LBES are giving a win-win for Solomon Islands in better infrastructure and money to community. This was initially a pilot but rapidly expanded and progressed quickly into full implementation. Management has been taken over by MID, but it may not be suitable in larger or more commercial communities.
- The Niue emergency response organisation was effective, but it was based on the personalities involved and the relationships and institutions that were well established at the time. Similarly, the cooperation between NZ and Australian donors on the Popua landfill was based on the strong personal relationships at that time.
- The need for good processes is highlighted by the Cook Islands DPA, but the systems adopted there reflected the structures that applied in the Cook Islands in 2004 and not be suitable elsewhere in that form.

When transferring practice, even within the Pacific, the differences in location or situation needs to be taken account of, with particular regard to:

- Geography – including patterns and density of settlement, remoteness and access to resources, topography, susceptibility to natural disasters
- Climate Change – vulnerability to events relating to climate change (e.g. rising sea levels, increased height of storm surges, increased frequency of storms)
- Institutional and Community factors – including community structures, community diversity, social and cultural issues, land tenure, local capacity and economic conditions, availability of labour, scale of local economy.

2.1.5 In-Country versus Donor EIA Practices

All Pacific Island countries have in-country laws and regulations for Environmental Impact Assessment. MFAT, ADB, World Bank, DFAT and other donors have their own policies and procedures they must implement. In many cases the in-country environmental regulations are basic and provide little guidance as to the rigor of assessment required, and the environmental agency (i.e. Department of Environment) is under-resourced and / or lacks capacity for assessing complex EIA. There are notable exceptions (such as Samoa). Good practice would ensure that in-country and donor requirements for EIA are harmonised where possible so that both requirements are achieved efficiently and effectively. Good practice would also include an assessment of the capacity of the environmental agency and support

given where necessary, but particularly if new technology is being introduced or the project has complicated environmental or social impacts.

SIRIP provides a good example of harmonisation, where the ADB safeguard processes and documentation were used for both the donor appraisal processes and the in-country approvals. In-country capacity was improved as part of project implementation. All donors deferred to the ADB systems because ADB had the capacity and provided leadership, even though MFAT staff note their frustration with the 'one size fits all' approach which was sometimes perceived as heavy handed and caused delays.

2.2 Efficiency

Efficiency is a measure of outputs against inputs (OECD DAC 1991).

2.2.1 Adherence to Good Project Management Practices

The benefits of good project management processes seem self-evident, but these are sometimes not achieved, whether by circumstance or expedience.

SIRIP

SIRIP appears to have followed well developed ADB project delivery and safeguards procedures, although the normal project preparation technical assistance (PPTA) stage was skipped. ADB processes for safeguards provided a framework for issue identification and the planning, implementation and supervision of impact mitigation and management. However, there have been concerns with the appropriateness of some of these requirements such as adherence to a standard IRR, noted earlier. The SIRIP Activity was based on a robust and transparent process for selecting subprojects, according to criteria in the NTP and funded through the NTF. Manuals for procurement and financial management have been established and guide future projects.

Niue Power Station Rebuild

The Niue Power Station Rebuild was initially an emergency response, where the immediate needs of disaster response could override normal process. That response followed good process, according to the roles and relationships of the key parties, particularly the EMC, Niue Cabinet and MFAT. There was also a separation of the emphasis on expediency in response and recovery, from the later reconstruction where more careful adherence to good processes for Activity design and implementation generally applied. An exception highlights this: the Niue Government undertook building works for a temporary powerhouse and then needed to retrospectively seek funds from the NZ Government, which was counter to the original agreement on roles (Ojala 2006).

Tonga Dumpsite Rehabilitation

The scope of the work for the Popua landfill closure was specific from the beginning – closure and rehabilitation of the dump for a clearly necessary environmental outcome. Good processes should have led to more integration of environment and social impact management. Background work was done to identify the potential impacts and issues, but they were not all integrated into project design. There was little assessment of baseline data and no post-project monitoring of impact; the community consultation report was commissioned outside the Activity planning process to address an identified gap. This did not allow ongoing review of technical solutions against cross cutting issues. No clear

conclusion may be possible on the benefits and impacts of the project on the community (such as health or economic) or on the environment. More emphasis on ongoing management of cross cutting issues would have been beneficial, even to an otherwise successful Activity.

The Tonga Popua Dumpsite Rehabilitation Activity was an adjunct to the larger AusAID managed solid waste project, but the Popua work had its own special requirements and therefore had its own project management processes. Clear arrangements were needed for roles and responsibility, including governance, but were not always made. Responsibility for land and community matters was not agreed early on, which meant that some issues were being dealt with by the Contractor (such as how to manage the communications on the closure of the landfill prior to rehabilitation), and issues such as the livelihoods and rights to land of the adjacent squatter community are still unresolved (more discussion of this issue is in later sections).

Cook Islands DPA

Processes were considered to be beneficial and necessary although their implementation was not effective (Okotai 2007, Peek and Miria-Tairea 2009). Issues that adversely impacted on the effectiveness of the DPA processes (Okotai 2007, Peek and Miria-Tairea 2009) included:

- Weak leadership and poor working relationships
- Responsible agencies did not adhere to the processes, and there was lack of ownership in some cases
- There were too many decision points in the approval process and too many parties involved (although this view may relate to disagreement on roles among the various agencies involved)
- There were too many committees, and a perception that referrals to NZAID staff in Wellington for approvals and contract support took too long (although Peek and Miria-Tairea note that this could be part of the 'blame game' that everyone would rather blame someone else than take responsibility)
- Under-spending of funds stemming from lack of direction
- Confusion about roles leading to delays
- The Secretariat was not effective
- Lines of authority / accountability were not clearly drawn.

These difficulties appear to have also affected the governance of activities implemented under the DPA. For instance, adhoc governance structures were reported to have occurred for the upgrading of the Mauke Water Supply (MFAT, 2013) because of the need to work around capacity gaps in government ministries.

The experience with the DPA shows some of the key elements needed for programme management systems and project processes to be effective, including:

- Leadership
- Ownership by all stakeholders including the recipient community
- An effective secretariat and appropriate technical advisers and support systems
- Clear and logical roles, responsibilities and lines of authority
- Decision and oversight committees that are logical and supported.

The legacy of the DPA can still be seen in the current processes and structures for the development programme management in the Cook Islands and in the management of current activities, even though the problems are not fully overcome. There continue to be similar problems in programme management, and delays in implementing development activities. This is highlighted by the delays in the Outer Islands renewable energy programme that led to MFAT taking responsibility for implementation. Some of this is attributed to the procurement rules of Cook Islands Government that currently apply[9].

2.2.2 Effectiveness of Procurement Methods

There is some variation in the methods of procurement of infrastructure Activities. For the physical infrastructure contracts for the four activities were procured as follows:

- SIRIP - Partner-funding for Solomon Islands Government to procure
- Cook Islands DPA – Partner-funding for Cook Islands Government to procure. This has sometimes not been effective and direct procurement by MFAT has then been initiated.
- Tonga Popua Dumpsite Rehabilitation – Negotiated direct contract engagement of contractor by MFAT, with physical works paid as a reimbursable expense, using MFAT contract conditions
- Niue Power Station Rebuild – Partner-funding for negotiated contract procurement by Niue Government.

Some recent projects have been procured directly by MFAT (e.g. the Airport West Renewable Energy project) using NZS 3910 as the conditions of contract. This contract form is specifically for construction works and is more suitable than the MFAT conditions used for the Tonga Popua Dumpsite Rehabilitation because its provisions cover the contractual requirements for construction projects more comprehensively.

Procurement modalities have been adopted to fit specific circumstances, such as linking with other projects, a need for faster implementation, or limitations in local capacity. It is not possible to identify a best modality, but there are advantages and disadvantages in each approach and it is important to important to recognise and mitigate the disadvantages.

Niue Power Station Rebuild

The procurement method for the Niue Power Station Rebuild was driven by the overriding need for urgent action – so it was necessary to negotiate with one supplier (Gough Gough and Hamer (GGH)) who was already engaged in Niue. This was done in preference to seeking competitive bids that may have reduced costs (despite the potential cost advantage of the established presence GGH had in Niue). Local workers were involved in powerhouse construction which was managed by GGH. This procurement method was effective in getting works done relatively quickly (over 18 months).

Tonga Dumpsite Rehabilitation

Direct procurement negotiated with a single contractor was also done for the Tonga Popua Dumpsite Rehabilitation Activity, in this case to be able to use the resources of the AusAID waste management project and the contractor already engaged there. The physical works were paid as a reimbursable cost. As for Niue Power Station Rebuild, competitive bidding

[9] Stakeholder Interview 1

processes may have reduced the costs of physical works, but would have resulted in delays. Potential cost savings may not have been realised because there were efficiencies in linking with the AusAID contractor and management.

SIRIP

For the SIRIP project, the project works were procured by the Solomon Island Government following the most common practices for development projects. Procurement and financial management procedures and manuals were developed in the previous roads project (PCERP) but MID had no capacity in procurement and financial management and this expertise was seconded in for SIRIP. There is still minimal procurement capacity (four people) and financial management capacity in MID, and this is supported by external (international) consultants.

The SIRIP project highlights other examples where practice can be adapted to suit the circumstances:

- The Solomon Islands do not have their own building standards so technical standards were based on Australian, NZ and Papua New Guinea standards
- An LBES contracting system was adopted for use of local contractors that suits the situation in Solomon Islands.

Cook Islands DPA

The Cook Islands DPA was set up to improve processes which were beneficial but there were still problems related to capacity to implement them. Greater involvement by MFAT was needed with the project works being procured by MFAT rather than by the Cook Islands Government[10]. Tradeoffs in adopting a different procurement method to achieve time and budget under the DPA have been reported, such as achieving best relevance and capacity building,.[11] Specific projects implemented under the DPA were not reviewed as part of this evaluation, and procurement modalities for these have not been assessed.

2.2.3 Project Design Practices and Financial / Economic Analysis

Project design needs to include related financial, economic and situational analysis. MFAT uses a 'value for money' criteria (MFAT 2011) as part of their Activity design for infrastructure investments. This may include financial and economic cost benefit analysis (CBA), but CBA is not routinely undertaken. This is different to the ADB or World Bank approaches of detailed financial and economic analysis of projects to meet a set Internal Rate of Return (IRR) criteria for funding. A clear understanding of project costs and benefits is essential so that costs and benefits for all phases of the project design are accounted for and managed as accurately as possible, from initial concept through to operations and maintenance.

Evidence of cost estimating being undertaken by a quantity surveyor was not evident on the projects other than SIRIP. Good quantity surveying is essential to ensure that costs for capital works and operation and maintenance are accurate and take local conditions into

[10] Stakeholder Interview 1
[11] Stakeholder Interview 8

account. A good example of appropriate maintenance costing is the LBES system used in the Solomon Islands.

SIRIP

In some cases, too narrow a view can be taken in project design. In SIRIP, a number of linked projects were reported not to have been included in the project design because they did not pass the ADB's IRR requirements. The details of how the IRR was assessed is not known and the IRR was not available for this evaluation. Connectivity in the design should have been considered in greater detail because it would have identified the economic importance of upgrading the wharves to complement the road improvements.

Cook Islands DPA

The opposite approach was followed in the Cook Islands when the Avatiu Harbour Extension project was funded. Considered on its own, the Avatiu Harbour Extension project did not meet the criteria required for funding as set out in the Project Coordination Committee (PCC) process. This project was critical to other port infrastructure developments in the outer islands and therefore the PCC was able to push the project through taking a view of the 'wider' picture. Despite the issues that have been documented around the PCC process, it did improve spending, quality, focus and objectivity (Okotai, 2007) through the primary focus on the technical evaluation of projects and incorporating better consideration of issues than previously.

Tonga Dumpsite Rehabilitation

The closure of the Popua landfill was overlooked when the AusAid waste project in Tonga was planned. The oversight was attributed to a lack of situation analysis, where the issue of 'what would happen when there was a cost to use a new waste service'[12] was not identified.

Project design of the Popua landfill closure specifically avoided the mitigation of the key social impacts (involving both human rights and gender issues) that were part of the project context. These issues were:

1. The loss of future income from scavenging by nearby squatter communities, and
2. The associated issue of the access to land by the squatters.

Niue Power Station Rebuild

For the Niue Power Station Rebuild Activity and the construction of the post-disaster temporary powerhouse, there was an misunderstanding about who paid for this aspect of the work (Ojala, 2006). The Government of Niue assumed New Zealand would provide funds, but the work had been assigned to the Government of Niue. This emphasizes the need for clear understanding and documentation of agreements at the project design stage.

[12] Stakeholder Interview 5

2.3 Effectiveness

Effectiveness is the extent to which aid activity attains its objectives (OECD DAC 1991).

2.3.1 Leadership in Key Positions

The need for strong leadership and management is clear. Continuity of staff is a key part of this, building on previous experience and institutional memory.

Cook Islands DPA

Peek and Miria-Tairea (2009) identified strong leadership as being needed in key positions to plan and drive the programme of works. They attribute some of the problems that beset the development programme in the Cook Islands (both under the DPA and prior to it) to poor relationships, bureaucratic rivalry and non-cooperation among those agencies responsible for implementation. Strong leadership was needed to focus stakeholders on the goals, build trust, define roles and responsibilities, and ensure accountability. In the absence of this, the result was a "clogged implementation pipeline" (Peek and Miria-Tairea, 2009).

Leadership is also critical in the roles directly responsible for implementation. The benefits of continuity of leadership and responsibility are shown in the Mauke water upgrade, implemented under the DPA. In this case the transfer of implementation from OMIA to the Ministry of Infrastructure and Planning (MOIP) was mitigated by the project manager not changing.

SIRIP

The Solomon Islands transport programme benefited from good and stable leadership over a long period. The key manager in MID remains in the position to continue to provide this leadership. MID staff on Makira during SIRIP implementation (Rishi Adhar, ADB, pers comm.) were very junior staff and needed more senior people to generate status among community members. The ADB Project Officer had been in place since 2000. He was very familiar with local situation and brought strong ADB institutional memory, and continues to have responsibility for the ADB's work in the Solomon Islands.

Niue Power Station Rebuild

The effective response to an emergency situation after the fire in the Niue power station reflects the leadership provided at the time by the Niue Government, the Emergency Management Committee (EMC) that was already established in Niue, and the New Zealand High Commission staff. Each party fulfilled their separate responsibilities but worked cooperatively to achieve rapid and well directed responses to difficult circumstances.[13]

2.3.2 Matching the Project Design to In-Country Capability

The matching of the project design to in-country capability is essential in successful delivery of a project that achieves good development outcomes. This is particularly challenging in the Pacific because the available of good local resources are limited and usually stretched to fulfilling many roles.

[13] Stakeholder Interview 2

SIRIP
Early in the project design of SIRIP it was recognised that the MID had very weak capacity and capability to undertake the role of designer and constructor. Their role was therefore adapted to run the asset management function of the works. The role of designer and constructor was outsourced to local consultants and contractors. This reduced costs for MID and had the added benefits of developing the local consultant / contracting industry, building the capability to undertake these types of works, and distributing revenue into the communities through the local contractors (rather than offshore to foreign contractors).

Cook Islands DPA
The Cook Islands DPA was implemented because there were no support systems in place for the prioritisation and selection of projects. Historically the Cook Islands Government has had very limited capacity to deliver any projects, not just infrastructure projects, which has resulted in a pattern of projects being taken on and built by donor agencies[14]. Peek and Miria-Tairea (2009) continually highlight that a capability and capacity study, had it been undertaken before the DPA, would have quickly highlighted the type of work that had to be done and the resources needed to do it.

Tonga Dumpsite Rehabilitation
The need for early assessment of capacity and capability is again highlighted in the Tonga Dumpsite Rehabilitation Activity. The Asset Management Plan does not contain an assessment of the capacity of Tongan Government agencies to implement it, including an estimate of funds required to train or recruit staff and purchase equipment. It is unknown whether the Asset Management Plan has been implemented and what the outcomes have been.

Niue Power Station Rebuild
Shortage of in country capacity was again highlighted in Niue where, with a population of about 1600, approximately 15 people have been identified as having necessary skills to undertake the roles required for infrastructure development and maintenance[15]. Additional training on the maintenance and operation of the new power station has been discussed, but no additional persons with the necessary capability have been identified to attend the training. To cover for the lack of in country skills the new power station does include remote monitoring (SCADA) which GGH can do from offshore and fix minor problems if necessary.

2.3.3 Stakeholder Involvement in Design and Implementation

Including beneficiaries in design is good practice, but this takes time and requires engaging people in culturally specific ways. The benefits are many but a primary benefit is improved design that meets the needs of all beneficiaries (including women, vulnerable, tenants and squatters). Other stakeholders should also be involved at the design stage, particularly those that may be adversely impacted from the infrastructure (such as loss of land, assets, disruptions to livelihoods) and those groups (churches, government agencies, NGOs etc) who can influence the outcomes or bring specific expertise not available in the implementing

[14] Stakeholder Interview 1
[15] Stakeholder Interview 2

agency or development partner. Specific expertise may be required to assist with these processes and to help integrate the needs of the beneficiaries into the project.

SIRIP

In SIRIP the Project Management and Capacity Building Unit (PMCBU) had a communications plan from the beginning of the project, with procedures and processes for engaging with the wide variety of stakeholders. The plan was continuously updated as the project developed. Women were specifically targeted. Stakeholder committees were set up with local representation to address and solve issues with the Contractor initially before the issues escalated and needed to go to the MID. Regular communications with the local people helped reduce delays, and improve relationships between the Contractor and the community. They helped pave the way for the Memorandum of Understanding (MOU) and other agreements for land and aggregates. Local knowledge of flood events, obtained through this consultative approach, contributed to more effective design of bridges and floodways.

Cook Islands DPA

Poorly effective stakeholder engagement and ownership in the Cook Islands DPA has been cited as one of the reasons for the weak progress and limited outputs.

> *There were real problems and perceived problems with the agencies involved with infrastructure development in the outer islands and instead of acknowledging these and attempting to deal with them, MFEM, OMIA and NZAID tried to solve the problems by going around them by setting up the DPA without full engagement of all the stakeholders.* (Peet and Miria-Tairea, 2009).

Community consultation was not effective, and there was low awareness of the projects and the DPA both within the implementing agencies and the outer island communities. Beneficiaries were not part of the selection of subprojects for the Cook Islands DPA and there was low engagement of the outer island councils and communities as a result.

In the Mauke Water Supply subproject under the Cook Islands DPA, the community were involved in scheme design, which led to innovations such as solar powered pumps to improve resilience and reduce diesel costs. The community provided labour during installation, and capacity was developed during this process that could be used in scheme maintenance, further developing the community's resilience and reducing the risk of 'build-neglect-rebuild.

Tonga Dumpsite Rehabilitation

Stakeholders were consulted about the Popua landfill closure, and passive recreation was one of the suggested end uses of the landfill that was followed into the design process. Community communications were left to the contractor during the landfill closure prior to the rehabilitation works, including the agreement for local people to salvage materials. This worked well on a practical level with day to day site management, but did not (and could not) address the wider, longer term social issues. A stakeholder committee or similar may have been able to work through the squatter issues and income restoration issues as part of the project.

2.3.4 Implementation, Supervision and Evaluation of Cross Cutting Issues

Good implementation relies on good capacity within the implementing agencies and the appropriate contractual instruments and other incentives to ensure cross cutting issues are addressed as intended during Activity design.

SIRIP

Several methods were used to implement and integrate cross cutting issues in SIRIP:

- Specific capacity building for the PMCBU
- IEE, IPSA, EMP and gender issues were included as covenants in the ADB's Grant Agreement and compliance was monitored throughout the project
- Cross cutting requirements were included in the Contractor's contract, and
- Climate change adaptation was incorporated into infrastructure design standards (such as bridge design and coastal protection works).

Formal mechanisms, such as contractual requirements and infrastructure design standards, and adequate supervision and monitoring, were shown to provide leverage achieving cross cutting outcomes.

In SIRIP, gender issues were a fundamental part in the project implementation. Women were targeted in consultation and one outcome was to address the concerns of interactions between foreign workers and young women in the village. Gender equality was promoted through the PMCBU ensuring contractors:

- Were encouraged to employ women in road rehabilitation and labour-intensive maintenance of selected national roads
- Paid men and women equally for work of equal type, in accordance with national laws and international treaty obligations
- Provided safe working conditions, and
- Complied with labour laws and abstained from child labour (ADB 2014).

Five of the 20 LBES contractors are managed by women, and having women in decision making roles is a major cultural shift in the male-dominated communities. Simple procedures such as requiring contractor's bank accounts to have both men and women as signatories provided equal control of, and access to, finances. While infrastructure is often superficially seen as 'gender neutral' SIRIP has identified how gender equity and equality can be addressed and sustained.

Ongoing supervision and monitoring is required to keep track of implementation. This was achieved in SIRIP through a number of mechanisms – contractors' monitoring and reporting procedures, PMCBU monitoring procedures and supervision by ADB safeguards staff.

Cook Islands DPA

There is no documentary evidence of supervision of EIA, land acquisition and consultation processes at the subproject level for the Cook Islands DPA, so it is unclear how well these issues were addressed by the implementing agencies and what the outcomes were. Reports from Mauke (MFAT, 2013; Robertson, 2010) suggest that community involvement led to good social and environmental outcomes:

- Solar powered pumps to increase resilience and reduce diesel consumption
- 100% of residents have access to safe drinking water (equal access to resources)

- Several new wells drilled to provide greater resilience for droughts, and allow for increased agriculture, and
- Total water use dropped following the installation of the new system[16].

Other Activities, such as coastal works and reef widening for shipping access, or using coral aggregates for construction could have had significant environmental impacts, but the actual outcomes of these Activities are not well understood and cannot be evaluated.

Assessment of Impacts

The collection of baseline and ongoing data to measure actual impacts (positive and negative) and outcomes for cross cutting issues is good practice. In the Tonga Dumpsite Rehabilitation income data was collected prior to the project but not during or following the project. The impact on local income has therefore not been measured or evaluated. In SIRIP baseline data was collected on road users; targets were set for improving travel time for economic and social travel, and post project data collected to compare to targets (44% decrease in travel time to schools, 70% decrease in travel times to medical clinics). Gender disaggregated data on LBES Contractors demonstrated the involvement of women (25% of contractors led by women). In Mauke, daily water use was measured before and after the project to measure impact on water efficiency (44% reduction), and data collected on how many households were connected to the scheme (100%).

2.3.5 Management of Land Access and Property Rights to Resources

The secure access to land for the siting and use of infrastructure is fundamental to most, if not all infrastructure Activities. In many Pacific Island countries land has 'customary ownership', communally 'owned' without formal land title. Land is considered taonga or ancestral treasure and is of central importance to cultural identity. It is therefore not always considered an asset that can be bought and sold. The rights to land vary, and are culturally specific. Access to land or property rights to resources such as aggregates or fisheries may be informally arranged between community members, or more formal or legal property rights may exist.

Land access or acquisition for infrastructure requires time and requires knowledge of local land tenure arrangements, which will have both legal and cultural aspects. Good practice requires the identification of land access or acquisition issues as early as possible in project preparation, and the provision of adequate time in the program for securing land before construction starts. Regardless of the land tenure legislation and cultural norms in the country, good practice land access negotiations require transparent and participatory processes that engage all affected people, in particular both women and men land owners, tenants or squatters, and the vulnerable. Ideally this should lead to informed negotiations, broad agreement and equitable compensation processes, but should always be backed up with a transparent grievance mechanism to capture and address complaints. The sourcing of resources such as aggregates also needs to go through a similar process, particularly in locations where the resources have communal ownership.

[16] No cause or reason has been provided for the drop in water consumption.

Further economic and social impact can occur from the loss of assets, and / or the loss of access to assets or livelihoods. For example, buildings and crops may need to be moved or destroyed, trees may require trimming, or people may be restricted from fishing or foraging areas. Good practice requires that people are no worse off from the Activity, which indicates that any loss of assets or access to assets or livelihoods should be mitigated or compensated.

Cook Islands DPA and SIRIP

For the Cook Islands DPA and SIRIP, which were both large Activities with many subprojects, the responsibility for land acquisition for temporary works and access to resources such as aggregates was assigned to the Contractor. During SIRIP, contractors negotiated directly with resource owners for aggregates through private commercial arrangements. It was agreed that in-kind works would be provided in lieu of paying royalties. Deferring the responsibility to the Contractor had practical advantages but created conflict in SIRIP in one situation when the Contractor unknowingly set up camp on disputed land, and had stones thrown at their vehicles and equipment[17]. Without Government or donor involvement, it is unclear how transparent or participatory the negotiations were and how fair or equitable the in-kind works were.

To acquire the land needed for short road realignments for the SIRIP project, Voluntary Land Donations were agreed to via an MOU between land owners and MID. Land acquisition processes began early to avoid project delays. At the request of the chiefs and leaders, in-kind work was used in lieu of cash payments to compensate land use because identifying all of the customary land owners and ensuring equitable payments would create community conflict and take too much time (ADB, 2014). In kind works were carried out by the Contractor and included provision of community water supplies, concrete floors for community buildings and levelling playing fields. In this way, using Voluntary Land Donation, the entire community can benefit from the compensation for the use of customary land. As part of the MOU, people who owned crops in the alignment were paid cash compensation.

Several issues occurred with the MOU process[18]; some people were disgruntled with not getting cash payments, some people received cash payments 'under the table', and some have questioned whether the in-kind work was fair compensation. MFAT staff recalled people deliberately planting crops in the alignment in order to be paid compensation[19].

Tonga Dumpsite Rehabilitation

The Tonga Dumpsite Rehabilitation Activity illustrates the impacts on economic rights from a change in land use. Squatters were living very close to the open dump, and scavenging waste materials to earn around $150 a week to supplement meagre incomes from fishing (Guttenbiel 2005). This was most commonly the women's work, although men also joined in when they could not fish. Opportunities to replace the lost income that would be experienced by these people from the landfill closure project was not factored in to Activity design. This is despite the social impacts the people would directly experience from the

[17] Stakeholder Interview 9
[18] Stakeholder Interview 6
[19] Stakeholder Interview 10

project, and the gender issues associated with removing the opportunity for women to bring income into the home. During implementation the Contractors and the community agreed to a 'final salvage' prior to the closure works commencing; however this activity was at best a short term boost in income and unlikely to have been equitable compensation for lost ongoing income. No follow up has occurred to measure the impacts on the men and women in the community and whether and how their livelihoods have been maintained or improved compared to pre-Activity levels. Including livelihood restoration in Activity design, or addressing it via some other integrated project, and ensuring there was medium term monitoring of outcomes, would have lowered the risk of harm to the squatter community.

Project planning should ensure adequate lead-in times for land access or acquisition negotiations. Ground work should not start until land access or acquisition has been completed, even where land issues appear straight forward. For Mamma Mai Solar Power Plant in Tonga, the Government of Tonga negotiated land access with the land-owning noble. Assured by the Government that all was okay, MFAT allowed construction to start without leases in place, and leases were eventually signed only on the day of opening. This was risky; the project may have never been able to operate and / or could have created a grievance legacy if land lease arrangements had failed.

MFAT's approach of separating out the land acquisition processes from the Activity leave them open to these types of risks, and make assumptions that the relevant Government has the capacity and capability to negotiate land access within the required timeframes. Not being part of the process or not requiring transparency means that MFAT cannot be assured that human rights and gender aspects have been adequately addressed. MFAT and the Government of Tonga lost an opportunity to improve the lives of squatters at Popua by specifically avoiding the issue of finding them a long term, legal solution to their living arrangements.

Land acquisition, compensation for lost assets and loss of access to assets or livelihoods all take time to work through with the affected people to reach a suitable compensation arrangement. People involved with SIRIP noted that resolving land issues caused delays during construction and that land owner engagement should have started earlier.

2.4 Impact and Sustainability

Impact is the positive and negative changes from the aid activity. Sustainability is the likelihood that the activity benefits will continue after the donor withdraws (OECD DAC 1991).

2.4.1 Effective Capability and Capacity Building

Capability and capacity building is an essential part of any infrastructure project if it is to be successful and sustainable. Unless the capability and capacity of the local human resources are built up then they are unlikely to be able to operate and maintain new or improved infrastructure so that it is sustainable as a long term asset. Peek and Miria-Tairea (2009) recommended that any new design for infrastructure ought to include a full capacity and capability study to identify skill gaps and the inputs needed to implement the infrastructure programme. This also should identify the areas where longer term capacity building is required to fill those gaps.

SIRIP

The SIRIP project had a major focus on capacity building. The recipient-led development modality meant that capacity building occurred on the project, and institutions were strengthened. MID is now stronger (increasing staff resources from 2 to now 14 engineers), although it is still weak due to high turnover of staff going to the private sector and a limited pool to recruit from. The project was very effective in developing a pool of national private sector consultants, and national and local contractors. The LBES maintenance system has been very successful in developing local contractors and community capability.

This highlights the need to take a long term view in supporting capacity building – not just during the project. This includes training more people than the immediate needs of the infrastructure intervention – loss of trained staff in Pacific countries is a common occurrence that diminishes the previous gains made in training and capacity building. The ADB and AusAID are active in the Solomon Islands for the long term and remain involved in the ongoing national transport programme.

Cook Islands DPA

The upgrading of the Mauke Water Supply System incorporated engagement and training of local staff to increase the capacity of the outer island organisations. This project used technology appropriate for outer islands. The project was assisted by a technical adviser from New Zealand local government in a unique cooperation agreement, and five local staff were trained in operation and maintenance through transfer of skills from active involvement in the construction. The Activity Completion Report (MFAT, 2013) notes that this was effective to an extent but that it was impacted by changes to senior island administration staff soon after the handover.

The Mauke Activity Completion Assessment (MFAT, 2013) noted that it is hard to effectively undertake capacity building and efficiently deliver a completed project at the same time is repeated by others.[20] In contrast, some see that capacity building needs to be hand in hand with infrastructure development and that it doesn't go well in isolation[21].

MFAT (2013) notes that "Finding the balance between getting a project effectively and efficiently completed while making the necessary structural changes to sustain function remains a challenge". It was also suggested that there are windows of opportunity for sector reform that appear and disappear and that new infrastructure can create those windows.[22]

Tonga Dumpsite Rehabilitation

The Tonga Popua Dumpsite Rehabilitation was effectively and efficiently completed, but there was very limited capacity building notwithstanding that this had been a strong part of the associated AusAID solid waste project completed by the same contractor. The Asset Management Plan does not analyse the capacity of the Tonga Government agencies to implement the plan, or the budget required to implement the plan and build capacity. This

[20] Stakeholder Interview 8
[21] Stakeholder Interview 11
[22] Stakeholder Interview 4

appears to have been primarily because the agencies and individuals responsible for the future management of the site were not agreed during project design.

The MWH review reports show the problem (MWH, 2007, 2008, 2009):

- The design review report in December 2007 notes that the agency responsible for ongoing management had not been confirmed, and recommended this was done as soon as possible to allow their involvement in construction
- The construction review report in September 2008 notes that Ministry of Lands was to be the agency responsible, and recommended that a representative be involved in the remaining works
- The completion review report in January 2009 recommended that the individuals responsible for site management be identified, briefed and a formal handover made.

It is not known if this handover was ever able to be done, and the site managers have not been able to be identified for interview in this evaluation.

Niue Power Station Rebuild

A similar situation to the Cook Islands DPA with limited human resource capacity exists in Niue where there are only 1600 people to provide all the services of government. It is challenging therefore to effectively build the capacity needed among such a small pool of people.[23]

Scale of projects also appears to be a contributing factor that limits capacity building in the development projects previously undertaken by MFAT. The ADB commonly undertakes $100 million projects and will spend $10 million of that on capacity building. MFAT projects are smaller so it is harder to do a whole-of-sector approach. It was stated that *"NZ is good at getting on with a thing, but doesn't have a wider impact. There is more expertise in the ADB than MFAT so the ADB is more able to do sector engagement."*[24].

2.4.2 Effective Processes for Maintenance

The 'build-neglect-rebuild' paradigm has been well documented (PAIC, 2013). The PAIC report identified three barriers to sound infrastructure management:

1. Incentives
2. Organisational capabilities
3. Resource constraints.

To address these issues a number of steps were suggested (PAIC, 2013)which were grouped into four categories:

- Address resource constraints
- Establishment accountability and appropriate incentives
- Building organisational capacity for asset management, planning and implementation
- Development assistance.

[23] Stakeholder Interview 2
[24] Stakeholder Interview 11

Development assistance was identified as one of the main reasons for poor asset maintenance in the Pacific because historically developers have focused their funding on the construction of new assets and not the maintenance of existing infrastructure (PAIC, 2013).

SIRIP

In SIRIP the LBES method of delivery was deemed a success as it was well planned right from the start of the project. That success could be attributed to having generally followed the four key steps as noted above and the lessons learned from PCERP, as follows.

A. Limited available plant and machinery drove the need to use a predominately labour based approach with support as required.
B. Maintenance criteria were specified within the contract, meaning the contractors were not paid unless the criteria was met. Local village labour was used which generated income for them, an 'ownership' of the road asset and its maintenance, and was a critical element of the works as it meant people stayed on the island for work.
C. Local capacity was built through the employment of local labour (including women) supervised by MID. At a regional level the private sector benefited from the development of pools of contractors and consultants who could undertake maintenance. Nationally the Solomon Islands now has a National Transport Plan which is predominately based around asset maintenance rather than asset creation.
D. Donors (ADB, WB, AusAid, MID) continue to contribute to the National Transport Fund (NTF). New Zealand does not contribute to maintenance and hasn't since 2011.

SIRIP and the present situation has generated competition among contractors and villages to get work resulting in good quality, cost effective maintenance[25].

Planned transfer in role of MID to become an asset manager and development of a local consultant and contracting industry to do the rehabilitation work was important to the long term sustainability of the project outcomes. The opportunities for women to form contracting firms, and their empowerment as labourers and decision-making was also important.

Cook Islands DPA

Through the interviews and document review, no real evidence of asset maintenance was noted for the Cook Islands DPA. This is not surprising as the DPA was a process for the identification and prioritisation of projects. In Mauke the Water Management Plan was drafted but not completed, and the current status of this Plan is unclear.

Tonga Dumpsite Rehabilitation

[25] Stakeholder Interview 9

An asset management plan was developed as part of the overall design for the closure of the Tonga Popua landfill. However, six years after the project was completed, ownership of the asset and its management is not clearly understood.

Niue Power Station Rebuild

The fire at Niue power station has been attributed to poor maintenance at the time[26]. Since reconstruction there has been an improvement of maintenance of the assets with GGH undertaking regular visits to the island and monitoring the health of the generators over the internet SCADA systems. It is unclear as to whether these maintenance requirements were incorporated in to the original activity design. A report by Empower which was commissioned to review the power sector in Niue including tariff pricing and make recommendations could not be located. Although not part of the overall project design, MFAT does contribute $1million / year towards asset maintenance on Niue with some of these funds available to maintenance of the Niue Power Station.

From the document review and interviews with various other donor and government agencies, it is clear that the issue of good asset maintenance is important and factored in early in the activity design. Capacity building and resource planning to undertake local operation and maintenance is also very important. Equally as important is following through post construction and monitoring. Cross cutting issues such as environmental management, and targets and methods for women's involvement should be operationalised into asset management plans and operational procedures.

2.4.3 Financial / Economic Sustainability

The financial and economic sustainability of the SIRIP project was assured through the LBES method of delivery because this meant funds went in to the local economy through the employment of local contractors and the community as labour. This created ownership of the overall road maintenance. There has also been a measurable expansion in the cocoa industry due to improved transport and services on Makira leading to improved economic development.

For the Niue project it was understood from the TOR which Empower were commissioned under that a review of tariff pricing was to be undertaken. That report has been unable to be located and therefore no findings can be concluded.

2.4.4 MFAT Practice

Change in Focus

MFAT practices have changed since the period when the Activities described here were undertaken. At the time that focus of the Aid Programme was on poverty alleviation and infrastructure projects were relatively infrequent. Since 2008 the focus has become on sustainable development, and infrastructure forms a significant part of the programme. Processes were previously ad hoc, with investment decisions for Activities being made unconnected to other Activities or initiatives. Since the period covered in the four Activities described in this report, MFAT has established better processes for assessing investments and Activities.

[26] Stakeholder Interview 2

Building Capacity in MFAT

Comment is made elsewhere about the issue of recipient capacity to undertake infrastructure Activities. MFAT also needs to build its own capacity to deliver an increased portfolio of infrastructure Activities, and potentially larger Activities. One way to do this is by working with other donors in compatible roles, as the SIRIP project showed. Building internal MFAT resources in project management, infrastructure and monitoring is also necessary so that MFAT can ensure that the outcomes they intend are achieved.

Strategic Focus

MFAT practices regarding maintenance and capacity building, and fostering institutional knowledge were noted during the evaluation as affecting the impacts of the development activities.

The New Zealand Aid Programme for infrastructure emphasises the creation or upgrade of assets. This is explicit in the Indicators adopted for the New Zealand Aid Programme Strategic Plan 2012-2015. However, as noted elsewhere in this report, good ongoing maintenance is vital to the success and sustainability of the investment in infrastructure. Similarly, capacity building is critical to building long term capability and self-reliance in the recipient countries. MFAT's focus seems to be more on construction and less on maintenance and capacity building. Maintenance and capacity building is included within the Activity design and construction, but this does not recognise that a longer term effort is needed, beyond the duration of the Activity, to be effective in maintenance and capacity building.

The Tonga Dumpsite Rehabilitation was completed in 2008 with MFAT funding, but the Aid Programme has taken no further role and there is no knowledge within MFAT of how or whether the Asset Management Plan has been implemented. Responsibility for maintenance of projects implemented under the Cook Islands DPA is left to the initiatives of the Cook Islands Government. This approach facilitates a cycle of build-neglect-rebuild (PAIC, 2013).

MFAT practice is to fund capital projects in which the operations and maintenance is planned in the design. The local technical staff are trained in maintenance during the construction and commissioning stages with the expectation that they will take over the operations and maintenance, maybe with some distance support from NZ experts. There are exceptions, such as a $1million dollar annual maintenance fund for Niue[27].

Institutional Memory

Having post staff in country is valuable to MFAT in developing in-country relationships. It has some advantages over the practices of other donors / development partners whose staff fly in fly out for projects, such as the ADB. The New Zealand Aid Programme approach comes with rotation of post staff 2 to 3-yearly, making it difficult to maintain continuity of knowledge in-country despite good handover processes. MFAT has had four separate officers responsible for managing the NZ activities in the Solomon Islands over the 8 year period of SIRIP.

[27] Stakeholder Interview 2

It was a little difficult to identify the MFAT staff in Wellington that had experience and knowledge of the past Activities being evaluated due to staff turnover. As a result, it was difficult to build a complete understanding of events because the perspective of each person was limited to their own experience without the full history and understanding of the Activity and previous actions. In the case of SIRIP, several communications with current Honiara post staff helped alleviate this issue as they had good long term experience with the Activity. In most cases, responsibility for the Activity or the country programme had transferred through several people over time, with resulting loss of continuity and knowledge. Frequent personnel changes impacts adversely on good management of development programmes and activities, and results in previous learnings and knowledge being lost, and not built in to future work.

3. Evaluation Conclusions

The following main conclusions can be made from the evaluation of completed infrastructure. Evidence has not been referenced in this section because it has been previously highlighted in Section 2.

3.1 SIRIP

- The National Transport Plan was critical in providing a framework for investment in transport infrastructure throughout SIRIP.
- The capacity and capability assessment of the MID identified weak capability and capacity to undertake the role of designer and contractor for works. Changing the MID to be an asset maintainer was one of the major successes of the project.
- Outsourcing locally enabled development of a private sector consultancy and contracting industry to do the work on SIRIP and has enabled MID to change its role to asset manager. Outsourcing locally also enabled revenue to go back into the Solomon Islands community, an aspect which is important in Melanesia. Strong leadership and adherence to the NTP funded by the Solomon Islands Government NTF continues to underline success.
- Dealing with land access and acquisition from the start of the project, and well before contractors got on site, enabled land issues to be resolved so that these did not impede works.
- Environmental and social impact management were formal contract requirements so that there were incentives and leverage to ensure the Environmental Management Plan was implemented during construction (legal agreements between ADB and the Government of Solomon Islands, contractual agreements between the Government of Solomon Islands and the Contractor).
- The LBES method of delivery was relevant and effective because:
  - It built capacity and capability within the sector and local communities.
  - Involving local villages created a sense of ownership leading to a higher level of maintenance.
  - The creation of a means to make money has resulted in people staying on their island.
  - Financial sustainability and quality of maintenance is maintained through competition for contracts between local contracting parties.
- MFAT policy of rotating staff every 2-3 years over the project can be associated with loss of institutional memory compared with some other donor agencies.
- The choice of the ADB to lead the project was correct although the lowest donor contribution to the project was given by the ADB, because they had the right experience in delivering transportation projects, best processes and safeguards.
- MFAT's lack of continuing involvement in post-project maintenance has impaired its ability to enhance the sustainability of the project and to ensure a return on its project investment, although funding by other donors contributes to the NTF.
- The ADB's strict IRR criteria meant a number of harbour or wharf projects were not undertaken. Had connectivity in the design, i.e. the bigger picture, been considered in greater detail it would have identified the importance of upgrading the wharves.

- Integration of gender issues into the design led to construction processes that were more respectful to local communities, and empowered women into employment and contract management roles that are being sustained after the completion of the project.
- Engaging with stakeholders and the community early in project design, and throughout implementation, using structures such as Communications Plans and Stakeholder Committees, has improved local capacity for participatory planning, improved road design through local knowledge, and reduced conflicts and impacts during construction.

3.2 Cook Islands DPA

- Prior to the DPA the choice of projects for implementation was ad hoc. The DPA was beneficial in providing a guiding strategy, but this was not fully integrated at local community level.
- A shortage of strong leadership within the process hampered the implementation of projects. The benefits of strong and consistent leadership were highlighted in the Mauke Water Project where a portion of the success of the project has been attributed to a consistency in project leadership (Project Manager).
- Good donor harmonisation and collaboration between MFAT and AusAid resulted in improvements to the way projects were planned and implemented.
- The DPA process was structured to suit the situation the Cook Islands and would require adaption for use in other locations.
- Termination of the DPA project has allowed the old practices and problems in lack of good programme management and implementation to return. This has been highlighted recently by MFAT taking on responsibility to implement the Airport West Project.
- If a capacity assessment had been undertaken before the start of the subproject, it would have highlighted a shortage of capacity within the CIGov to deliver the subprojects under the DPA.
- Technical review of the subproject proposals and designs by the PCC helped ensure these were as effective as possible.
- Requiring contractors to negotiate access to resources and land was risky and led to project delays.
- Engaging the community during subproject design and implementation of the Mauke Water Supply led to a scheme that fitted the needs and aspirations of the community, and provided employment and training on the island to install and maintain the infrastructure. This has built resilience into the Mauke community.
- Although EIA and consultation was required as part of subproject development, no systems, standards or frameworks were provided for cross cutting issues, and no formal systems for supervision were developed. Because of this it is unclear what types of environmental issues may have occurred from works in the coastal or marine environment.

3.3 Tonga Dumpsite Rehabilitation

- There was good donor collaboration between MFAT and AusAid. This was personality driven, based on good working relationships in place between post representatives.

- The environmental and social impacts were adequately scoped during Activity concept and during closure feasibility studies and design. The environmental issues were well managed. However, one of the most significant human rights and gender issues was not adequately addressed – the restoration of livelihoods of the adjacent squatter community who received income from scavenging waste.
- Maintenance requirements for the project did not adequately consider who would be responsible for the rehabilitated site and their capacity to maintain it, including the monitoring and mitigation of ongoing environmental and social impacts. It is therefore not certain that maintenance will be properly undertaken.
- A situation analysis was not undertaken when designing the AusAid waste management project. As a result the need to close the 'free' dump at Popua prior to opening the new landfill site was not identified early enough.
- The rehabilitation of the site has been completed to suit the intended purpose of the site for passive recreation, but the sustainability of this will rely on continuing commitment to this by Government of Tonga.
- Reluctance of MFAT to get involved in land issues, believing the issues of squatters near the dump was the Tonga Government's responsibility, missed a potential opportunity to improve the rights of the people to a secure place to live.

3.4 Niue Power Station Rebuild

- The response to the initial disaster was effective, helped by the good established relationships and understanding of roles between the governmental stakeholders.
- The cause of the fire damage can be attributed, at least partially, to poor maintenance.
- Maintenance has improved since construction of the new power station. Some maintenance is funded from an annual $1 million asset management fund to Niue. The allocation of this fund is rigorously enforced through applications being supported by a business case.
- The strong management of work by a firm (GGH) already working on site resulted in an efficient project delivery in the emergency situation.
- Replacement of 'like-for-like' technology in response to the emergency situation was the main driver for the choice of infrastructure but, as a result, alternatives (including consideration of cross cutting aspects such as climate change) were not assessed in detail at the time.
- It is not understood whether environmental impacts from operations and maintenance, including the disposal of damaged equipment, has been part of the project. It appears that cross cutting issues were not considered because of the 'emergency situation'.
- Subsequent solar projects by JICA and the EU aid Programmes have not been well planned and integrated with the existing power station systems, and cannot operate with the existing generators. This has resulted in the solar generation being switched off whilst a solution is found.

4. Lessons Learned

The Terms of Reference for this evaluation set four key evaluation questions to be answered.

1. What does good practice for undertaking infrastructure investments look like?
2. What could have been done better?
3. What are the lessons that can be applied to other infrastructure investments across the Pacific and potentially elsewhere in the world?
4. How has cross-cutting themes been addressed?

4.1 What Does Good Practice Look Like?

A guiding country strategy is needed for prioritisation of infrastructure investment.
A recipient country strategy or framework for infrastructure investment is needed to guide decision-making and get the best outcomes and impacts of development assistance. Such a strategy needs to be developed by in-country stakeholders, and should be underlain by value and risk assessment. MFAT's own country and infrastructure strategies should then align with the country's infrastructure strategy. In many cases there are identifiable limitations on the capacity of communities and governments to successfully manage all development activities. Different activities all compete for the same resources, whether that be technical expertise, administrative capacity or funding. Good prioritisation of activities and transparent prioritisation criteria is therefore crucial to the success of development initiatives, and balance both national priorities and community needs.

Prioritisation of investment should take account of:

- Contribution to the country strategy priorities
- Economic analysis to identify Activities with greatest benefit-to-cost
- Risk (economic, social, environmental) of asset failure
- Life cycle costing to ensure the long term costs are known and able to be funded
- The capacity of the in-country resources to complete the project and to manage the infrastructure thereafter, and the feasibility of supplementing those resources to successfully complete the Activity.

Strong leadership and management is essential to achieve good outcomes.
Strong leadership and management is essential to focus stakeholders on the goals, build trust, define roles and responsibilities, and ensure accountability. Without such direction, projects can be delayed or halted, conflicts can undermine the outcomes and impacts that were intended, and loss of efficiency can result in unnecessary additional costs. Continuity of staff is part of good project leadership at all levels, so that there is a strong understanding and ownership of the project outcomes by those involved, and to build on previous experience and institutional memory.

Good coordination with and among donors improves outcomes, and poor coordination undermines outcomes.
This lesson applies to coordination between donors to harmonise practices and ensure their different undertakings are complementary. It also applies to coordination of donors with the

recipient governments to ensure the development interventions are appropriate to the needs and priorities of the countries. Capacity building for the various donors can be an additional benefit of working cooperatively and making best use of complementary expertise. Good coordination is not easy to achieve but it improves outcomes and reduces transaction costs. Success stories such as the SIRIP project also show the greater impact that pooling of resources in cooperative projects can have. Working within commonly agreed national strategies helps in coordinating and guiding the different agencies and individual stakeholders. Good donor coordination is based on strong relationships and practices established and maintained over time.

Adherence to good project processes improves outcomes.
Good project processes need to be set that are appropriate to the situation and within the ability of organisations and individuals to implement. Circumstance or expedience may sometimes require changes to established practice, but the key measures for good planning, design, technical review, management and oversight should not be downgraded. The key elements needed for programme management systems and project processes to be effective, include:

- Strong leadership and management to ensure that the processes are followed
- Ownership by all stakeholders including the recipient community
- An effective secretariat or project management unit and appropriate technical advisers and support systems, with the capability to implement these
- Clear and logical roles, responsibilities and lines of authority
- Decision and oversight committees that are logical and supported.

Procurement modalities may be adapted to suit special requirements but departure from normal practices compromises some outcomes.
Different procurement modalities can be adopted to fit specific circumstances. It is not possible to identify a best 'general' modality, because this will depend on the situation. There are advantages and disadvantages in each approach and it is important to important to recognise and mitigate the disadvantages. Direct donor-procurement is effective in getting works done reasonably quickly, and can help in supplementing limitations in local capacity. Recipient-led development means that capacity building occurs on the project and institutions are strengthened, but this usually takes longer. Departure from competitive bidding processes or negotiation with a single contractor (such as where they are engaged in complementary projects) may result in quicker implementation and can take advantage of compatability with other roles.

Project design practices need to take in the big picture and not focus on completion of a single task.
Wider aspects of a project should not be overlooked in the imperative to efficiently deliver new infrastructure. Connectivity in the design and a sector-wide view (i.e. the bigger picture) is needed to identify the importance of link projects that may not pass prioritisation criteria on their own or may be triggered by the outcomes of the core project. Incorporation of independent technical evaluation has the potential to improve spending, quality, focus and objectivity. A good assessment of capability and capacity limitations of implementing agencies should be undertaken at the beginning of a project, and the project design and implementation systems should then be suited to those limitations.

It is essential to clearly understand project costs and benefits. The costs and benefits for all phases of the project design should be as accurately accounted for as possible, from initial concept through to operations and maintenance. A financial and economic analysis should be undertaken at project design stage and at the end of the project. This is necessary even where there is already an agreement on a development intervention. Currently MFAT does not routinely undertake financial or economic cost-benefit analysis as part of project design, but uses a 'value for money' approach which may include cost/benefit analysis.

Involving stakeholders in design improves outputs and outcomes.
Including beneficiaries and other stakeholders in design is good practice, but this takes time and requires engaging people in culturally specific ways. A primary benefit is improved design that meets the needs of all beneficiaries. Potential adverse impacts (such as loss of land, disruption of livelihood) can be identified and mitigated, and local knowledge can be incorporated into the technical assessments. Specific expertise may be required to assist with these processes and to help integrate the needs of the beneficiaries into the project. Early involvement and regular communication with communities can reduce delays, improve relationships between the Contractor and the community and pave the way for agreements for land and resources.

4.2 What Could Have Been Done Better?

MFAT practices affect the long term impact and sustainability of infrastructure investment.
Good ongoing maintenance is vital to the success and sustainability of infrastructure investments. Similarly, capacity building is critical to building long term capability and self-reliance in the recipient countries. MFAT's focus seems to be more on building and less on maintenance and capacity building, explicit in the Indicators for the Aid Programme Strategic Plan. Support for maintenance and capacity building is included within Activity design and implementation, but this does not recognise that a longer term effort is needed, beyond the duration of the Activity, to be effective in this area. Greater focus on full life cycle costs for projects could assist here.

Frequent donor personnel changes impact adversely on good management of development programmes and activities. They result in previous learnings and knowledge being lost and not built in to future work – good handover processes are therefore critical.

Better matching of project design to in-country capability will improve outcomes.
Infrastructure development is very challenging in developing countries, especially small nations, because the available good local resources are limited and usually stretched having to undertake many roles. It is essential to successful project delivery that the in-country capability is realistically assessed at the beginning, and appropriate responses are made in tailoring the project design (including scope, appropriate technology, timeframes and resources). In some cases Activities are undertaken based on unrealistic expectation of in-country capability, or ignoring known limitations because of difficulties in addressing the issues.

Actions may include:

- Supplementing capacity with private sector and international resources for the project
- Reducing the scope of a project or number of projects to match the capability in-country and the ability of the recipient country to assimilate the investment
- Extending the project duration or scope to build the capacity needed for implementation – e.g. undertake a precursor stage to build capacity, include more steps, or take a longer time to implement.

More effective capacity building will improve long term outcomes and sustainability of infrastructure investment.
Capacity building is an essential part of any infrastructure project if it is to be successful and sustainable. Unless the capacity of the local resources are built up then they are unlikely to be able to operate and maintain new or improved infrastructure so that it is sustainable as a long term asset.

A full capacity and capability assessment (or gap analysis) to identify skill gaps and the inputs is needed at beginning of the project to identify the areas where longer term capacity building is required to fill those gaps.

Capacity building must be included even in expedited procurement. Active involvement of the relevant local people is essential. It may be that capacity building assistance is best procured separately from the construction of new infrastructure.

Capacity building needs to be long term (during and beyond the period of the construction project). This includes building in more training than the immediate needs of the infrastructure intervention – loss of trained staff in Pacific countries is a common occurrence that diminishes the previous gains made in training and capacity building. Relevant expert advice over a long term to those implementing infrastructure would facilitate progress and increase sustainability.

More effective provision for maintenance is needed for infrastructure investment to be sustainable.
The focus of development assistance was identified as one of the main reasons for poor asset maintenance in the Pacific - funding has been focussed on the construction of new assets, and less so on the maintenance of existing infrastructure.

Planning ongoing maintenance systems is generally factored in early in the activity design. More support for asset maintenance is needed post-construction. This may include capacity building, ongoing expert technical support, supplementary resourcing from in-country or overseas, and monitoring of asset management performance. Cross cutting issues such as environmental management, and targets and methods for women's involvement, should be operationalised in asset management plans and operational procedures.

4.3 What Lessons Can Be Applied Elsewhere?

Lessons are transferable but need to be interpreted to recognise differences in social, political and environmental conditions.
The other lessons identified here are all potentially able to be applied to other infrastructure investments.

It is critical to understand the differences in each local situation, and to adapt practices appropriately and avoid aspects that are applicable or tailored only to the previous locality. Approaches taken to design and manage the Activities offer general guidance in other projects. However, the transferability of specific technologies or processes needs to take account of existing systems, and social and cultural context. Even within the Pacific, transferring practices from other locations or situations needs to be carefully considered and planned, with particular regard to:

- Geography
- Climate change
- Institutional and community factors
- Land tenure.

4.4 How Have Cross Cutting Themes Been Addressed?

Climate change, environmental impacts, human rights and gender aspects of projects have been addressed differently in each of the four Activities.
The different approaches to cross cutting issues reflects the different types of infrastructure, nature of the environmental and social issues as part of project context, the project delivery mechanism and MFAT's role in project management. It also reflects the ad hoc approach to cross cutting issues by MFAT staff during the period of the Activities. The major learnings are provided below.

The IDG Quality Review of Activity and Programme Management in 2011 raised many learnings about the guidance, support and skills required to adequately scope and manage cross cutting issues (MFAT April 2012). In response, MFAT developed a 'Cross Cutting Strategy' to 'strengthen the integration of cross cutting issues into the New Zealand Aid Programme policies, programmes and Activities' (MFAT, April 2012). The Activities in this evaluation precede the review process and it is recognised that there is now a more systematic and consistent approach to scoping and managing cross cutting issues.

In general, gender, climate change, environment and human rights are part of the context in which the development occurs, and understanding the context leads to a better designed project. While scoping issues early in the Activity and taking time to understand context can create delays in project progress early on, the purpose is to design projects in an informed way, with good understanding of risks and risk mitigation, and opportunities to 'do good'.

Good implementation relies on good capacity within the implementing agencies and the right contractual instruments and other incentives to ensure cross cutting issues are addressed as intended during Activity design. Formal mechanisms such as contractual requirements and infrastructure design standards, and adequate supervision and monitoring, was shown in SIRIP to provide leverage achieving good environmental and social outcomes.

The collection of baseline and ongoing data to measure actual impacts (positive and negative) and outcomes for cross cutting issues is good practice. This was well executed in SIRIP and to a lesser extent Mauke, but was poorly executed in Tonga Popua Dumpsite Rehabilitation. Actual impacts may be ongoing or have a long lag time, and therefore may require a longer tail to projects where there is an extended period for evaluation of impact.

Climate Change Adaptation

Climate change adaptation was a specific outcome of the SIRIP Activity, because of the foreseen impacts on road infrastructure (specifically bridges and coastal protection works) from changes in rainfall, flood events, storm surges and sea level rise. Climate change adaptation has been operationalised into standard design guidelines. Climate change and disaster resilience (droughts) was considered in the design of the water supply for Mauke under the Cook Islands DPA. It is evident from SIRIP and Mauke Water Supply that climate change adaptation should be a fundamental requirement for the resilient design of hard infrastructure and water supplies. It is best considered in feasibility stages and again in detailed design, and in the production of standard operating procedures, operations and maintenance manuals, design guidelines and other outputs.

Climate Change Mitigation

Climate change mitigation, including the calculation of baseline and post-Activity greenhouse gas emissions has not been a considered feature of any of the four Activities. It would be relevant for road upgrades (SIRIP) and diesel power stations (Niue Power Station Rebuild), and to a lesser extent for landfill closure (despite only minor impacts due to the small scale of the Popua landfill). The prediction of climate change mitigation impacts (measured as tonnes of carbon dioxide equivalents) should be analysed during the feasibility and detailed design stage of the Activity, and baseline and post-Activity calculations done to validate the predictions. This data can then be collated to calculate the climate change impacts from MFAT's development portfolio.

Human Rights and Gender

The key human rights issues that have been identified in the evaluation are participation, land access and acquisition, economic rights (including loss of assets and livelihoods) and inclusiveness.

The lessons learnt in relation to participation (by both the beneficiaries and the stakeholders who may be adversely impacted) has been discussed above. Stakeholder participation was most effective in SIRIP where communication and engagement practices were operationalised into project management. In comparison, stakeholder participation in Tonga Popua landfill closure was ad hoc. A more systematic and more meaningful process of engagement may have led to better outcomes for squatters (access to land to live, the protection of economic and livelihood rights), a more relevant and useful end-use for the land, and / or better asset management.

Economic and livelihoods rights, gender equity and equality should be incorporated into Activity design and integrated into the implementation process and outputs so that no one is left worse off from an Activity but also so that the opportunities to 'do good' are fully exploited. SIRIP demonstrated that gender mainstreaming is beneficial to effectiveness and sustainability of an Activity. MFAT should take the lead and work with Governments to

reduce discrimination and inequality, rather than defaulting to 'designing out' difficult issues such as land acquisition or squatter's rights from Activities.

Land Access and Acquisition

The secure access to, and acquisition of, land for infrastructure is fundamental to most, if not all Activities, in one way or another. Gaining access to land is complicated where there is a dispute, and / or where custom land ownership requires consultation with a large number of people. Even where land access or acquisition appears straight forward, project planning should ensure adequate lead-in times and construction work should not start until land acquisition has been completed.

To be successful, Activity concept and design should include processes for land access and acquisition as early as possible. This was the case in SIRIP, because the Activity was subject to the ADB Land Acquisition policy. Where MFAT is the lead donor, land acquisition has been 'designed out' of the Activity and left to the Government to address. MFAT's approach leaves the Activity open to delays (land access isn't secured in time for construction to start), and makes assumptions that the Government has the capacity and capability to negotiate land access and acquisition within the required timeframes and in a manner to avoid human rights and gender discrimination.

Good practice land acquisition negotiations require transparent, participatory processes that engage all affected people, in particular both women and men land owners, tenants or squatters, and the vulnerable. Ideally this should lead to informed negotiations, broad agreement and equitable compensation processes, but should be backed up with a transparent grievance mechanism to capture and address complaints. SIRIP processes were heralded as participatory, however there were still grievances about fairness and equity of in-kind compensation.

Guidelines and standards should be prepared to guide the land acquisition process in accordance with Cross Cutting Policies if land acquisition is deferred to the Activity implementation phase. In cases where the actual infrastructure sites are unknown at the time of Activity design, contract conditions should be used between the implementing agency and third parties (such as contractors) to ensure human rights, environment and gender issues are addressed during site identification.

Economic Rights – Loss of Assets or Access to Assets or Livelihoods

Rights to economic wellbeing, including the ability to use private or communal assets, and to generate livelihoods, are also affected by infrastructure projects. Access to land or resources may be affected (such as restricting access to foraging areas), and / or people's assets (such as buildings, crops, taro pits etc.) may be destroyed or damaged.

As with land acquisition, it is best practice to identify any loss of assets or access to assets or livelihoods during project design, and provide for adequate compensation or impact mitigation. The process should be transparent, participatory, and equitable.

Guidelines and standards should be prepared during design to comply with Cross Cutting Policies for Activities where it is not known what assets may be lost or affected at the time of design, or where sourcing resources (such as aggregates) is deferred to contractors during project implementation..

Environment

Good practice would ensure that environmental impacts are scoped early and all but the most minor impacts designed out or mitigated. Environmental benefits, such as avoiding diesel use or cleaning up waste problems, should be a fundamental consideration across the project. In-country and MFAT requirements for EIA should be harmonised where possible, providing a process where all requirements are met efficiently and effectively. Good practice would also include an assessment by MFAT of the capacity of the environmental agency and support given where necessary. This is particularly true if new technology is being introduced or the project has complicated environmental or social impacts (such as landfill closure or reef widening).

Environmental impacts were scoped early in Tonga Dumpsite Rehabilitation and SIRIP, and mitigation and management was incorporated into Activity implementation. The SIRIP project demonstrated the importance of operationalising impact management. It had a cascade of impact management plans (at the PMCBU and contractor level), having clear roles and responsibilities, investing in capacity building and contractor's contract conditions to ensure good environmental outcomes during construction.

Tonga Dumpsite Rehabilitation Activity and Mauke Water Supply Project are examples of the importance of operationalising environmental management into the ongoing asset management beyond the life of the Activity (both had some form of asset management plan). This is relevant for other infrastructure projects with ongoing environmental impacts such as hydropower schemes and wastewater treatment plants.

Assessing the environmental impacts of programmes with a series of subprojects (such as the Cook Islands DPA) early on in the programme development is difficult because the investments are not well scoped. An alternative is to incorporate an EIA framework or guidelines or standards into the sub-project development process. This approach requires ongoing supervision and monitoring of subproject development. The Cook Islands DPA required both an EIA and consultation to be carried out for subprojects. However, there was no indication of the standard of rigour that would need to be applied and it is not clear how well this was supervised and appraised by MFAT during the process.

5. Recommendations

The following recommendations are made:

5.1 What is good practice?

Infrastructure Planning

1. ***Each country should have a national infrastructure plan or strategy to guide infrastructure investments*****.** Infrastructure projects should be determined according to the national plan or strategy and subprojects selected according to priorities and criteria expressed within the national plan. This should be the responsibility of the recipient government and MFAT priorities as a donor should be consistent with this plan or strategy.

Procurement

2. ***Procurement modalities for each Activity should be adopted to fit the specific circumstances of the Activity, institutional structure and local capacity*** (responsibility of MFAT)***.*** This could include linking with other projects, direct procurement, a need for faster implementation, or developing local capacity. It is not possible to identify a best modality that fits all situations, but there are advantages and disadvantages in each approach and it is important to recognise and mitigate the disadvantages.

Community Involvement

3. ***Beneficiary communities and other stakeholders impacted by the infrastructure should be consulted from the beginning of the Activity design process following an agreed Communications Plan*** (responsibility of implementing agency, MFAT). They should be involved in the design process to ensure that local knowledge and experience is included in the project and engineering design; and that beneficiary needs (e.g. men and women, disadvantaged groups) are met and adverse impacts are avoided or mitigated. Communication with the beneficiary communities and other stakeholders should follow a defined Communications Plan that is updated as the project progresses. The Communications Plan should be developed in conjunction with the stakeholder communities and government.

5.2 What could have been done better?

Financial / Economic Analysis

4. **MFAT should require a complete financial and economic analysis for all projects** (MFAT responsibility). A clear understanding of project costs and economic return is essential in planning projects. Whole of life costs for all phases of the

Activity design should be as accurately accounted for as possible, from initial concept through to operations and maintenance. Activity design should include consideration of potentially linked projects that may not pass prioritisation criteria (e.g. IRR) on their own, or of additional projects that may be triggered by the outcomes of the core project, but are an essential part of the bigger picture and development impact.

Capacity and Capability Building

5. ***A full capacity and capability analysis should be undertaken at the start of each Activity to identify skill and resource gaps and the capacity building inputs needed to implement the infrastructure programme***, including post-construction operation and maintenance where longer term capacity building and support is required to fill gaps (MFAT responsibility). Capacity building is a long term process and consideration should be given to donor funding of capacity building beyond the life of the design and build phase of the project. This is especially the case where the initial capacity for design, operation and maintenance is weak, and the pool of suitable candidates to be trained is small with a high turnover. Different capacity building models may be applicable depending on the project and existing in-country capacity and institutional structure. Technical support from offshore is appropriate where the technology and systems to be maintained is complex, and where the local capacity is weak with limited resources.

Effective Provision for Maintenance

6. ***Greater emphasis should be given to good asset maintenance and factored into Activity design, with consideration given to post-construction phase support of asset management*** (MFAT responsibility). The choice of infrastructure technology should account for the local ability to operate, monitor, and maintain them, and where necessary supported by limited technical assistance from offshore. Infrastructure asset maintenance planning at the start of a project should include (PRIAC 2013):
    - Addressing financial resource constraints
    - Establishing accountability and appropriate incentives
    - Building organisational capacity for asset management planning and implementation, and
    - Role of development assistance.

5.3 What lessons can be applied elsewhere?

Transfer of Successful Practices

7. ***Transfer of successful practices to a new situation must be carefully planned to adapt to the new geography, climate change, institutional and community, social and cultural, land tenure, capability and capacity factors*** (MFAT responsibility). General approaches to design and management of Activities may be used to guide other projects. Specific technologies may also be readily transferrable. However, the processes by which they are transferred into an existing system, and social and cultural context needs to be carefully planned.

5.4 Addressing of cross cutting themes?

Management of Cross Cutting Issues

8. ***Mechanisms*** *(such as Impact Management Plans)* ***should be included in formal documents*** (such as loan or grant agreements, contract conditions with contractors and consultants, and infrastructure design standards) ***with provision for adequate supervision and monitoring by MFAT to provide incentives and leverage to achieve beneficial cross cutting outcomes in infrastructure Activities.*** This should be the responsibility of the recipient government, implementing agencies and MFAT.

9. ***Management of ongoing cross cutting issues (after Activity closure) should be operationalised into the implementing agency's asset management plans, design manuals, and other institutional policies and procedures*** (implementing agency, MFAT responsibility). The Activity should provide time and budget to prepare this material and provide any training required prior to hand over. Baseline and ongoing data to measure actual impacts for environmental, climate change, gender and human rights aspects (positive and negative) and outcomes should be collected. Where relevant, MFAT should plan for a longer tail for investment in projects, where there is an extended period for evaluation of impact.

10. ***In-country and MFAT requirements for Environmental Impact Assessments should be harmonised where possible to ensure all donor and recipient country requirements are met effectively and efficiently*** (recipient government, MFAT responsibility). Good practice should also include an assessment of the in-country environmental agency capacity during Activity design and support given where necessary by MFAT and / or specialists during Activity implementation.

11. ***Resolution of land issues should begin at the start of the Activity and adequate time given in the programme for resolving such issues and / or access to resources before construction starts*** (implementing agency, MFAT responsibility). MFAT should provide support in terms of budget, capacity building and / or specialist expertise to assist the Government to achieve appropriate human rights outcomes and ensure gender equity in the process.

Appendices

Appendix One – Summary Description of Activities

The following information is intended to provide a general description of the four Activities covered in this evaluation and some key events, solely for the purposes of understanding this report. It is not intended to be a complete account of the Activities. The information here is drawn from project reports.

Solomon Islands Road Improvement Project (SIRIP) (2007-2013) (Transport):

In 2006, the Solomon Islands were still recovering from years of conflict (1999–2003). There was a high incidence of poverty (20% of households), poor human development indicators, and high unemployment. Restoration of important infrastructure was among the key strategies in the government's National Economic Recovery, Reform, and Development Plan 2003–2006.

The road network was sparse, and did not reach 77% of the rural population. Roads were constructed with low design standards and poor-quality materials, and maintenance was underfunded. In 2006, only an estimated 20% of roads were in good condition, and the others were not passable by light vehicle. Because of the extensive experience of the Asian Development Bank (ADB) in the transport sector, the government requested ADB to prepare the Road Improvement (Sector) Project. The project was co-financed by the governments of Australia and New Zealand. The Ministry of Infrastructure Development (MID) was the executing agency.

SIRIP used the lessons from the earlier successful implementation of the Post-Conflict Emergency Rehabilitation Project (PCERP) for repairs to restore road infrastructure and technical assistance (TA) for institutional strengthening. Roads and bridges in Guadalcanal and Malaita were rehabilitated under PCERP (2000–2007). It was recommended that MID decrease its direct provision of works to concentrate on transport policy development, regulation, asset management, and contract administration under the TA. Preparation of the government's National Transport Plan (NTP), establishment of a transport planning and policy unit, and a transport task force were also initiated under the TA.

SIRIP was processed without a project preparation TA. Instead, the findings of the NTP provided the broad priorities by location from which indicative subprojects were determined using a multi criteria analysis.

The MFAT Activity Completion Assessment (MFAT October 2014) records that the project started in February 2007 and ended in October 2013. Total project costs were NZ$55.35 million for SIRIP and PCERP, of which New Zealand funded approximately $15 million from 2007 for SIRIP and for a major expansion to PCERP for road reconstruction.

Outputs encompassed:

- 121 km of roads rehabilitated
- 148 water crossings rehabilitated (including 2 high-level bridges in Makira and 32 other major water crossing structures)
- 133 km of roads regularly maintained in the life-cycle of the projects
- 60,000 square meters of Honiara city roads resealed
- 3 km of coastal protection works and 1.2 km of river training.

Development Partnership Arrangement for Cook Islands Outer Islands Development Infrastructure Construction and Upgrade (2005-2008):

A tripartite Development Partnership Arrangement (DPA) between AusAID, NZAID and Cook Islands Government (CIGov) was signed in 2005 to guide infrastructure investment for Cook Islands outer island communities. This included the construction of new, or the upgrade of existing, public buildings or structures (including public utilities such as power and water supplies).

Prior to the DPA the selection of NZAID funded outer island development projects was ad hoc. Other than the 2001-2006 Cook Islands Country Strategy there was no clearly defined process to determine and prioritise eligible projects. This created limitations of working within a one-year funding cycle, and intermittent design and costing issues. The DPA became the NZAID, AusAID, CIGov process for decision making (management protocols, programme planning, project selection and implementation).

The DPA was to provide for simplified and streamlined processes that:

- Provided a clear statement, and uniform application of project eligibility criteria
- Provided a mechanism for project prioritisation
- Adopted a strategic planning approach to project development and implementation that provided clarity of expectation and allowed for the effective use of resources
- Ensured that key project cycle steps were undertaken for each project, including project feasibility studies, impact assessment studies, project design and project implementation reports, monitoring and evaluation
- Clarified the roles and responsibilities in relation to contractor selection, project management, implementation, quality assurance, completion, and ongoing care and maintenance
- Provided for effective monitoring and evaluation of project and programme impacts.

A summary of the timeline is provided below:

- Commenced 2005 for 3+2 year term
- Reviewed in 2007, and extended to 2010 with a $6 million programme
- Independent Reviews were undertaken in 2007 and 2009
- The processes were initially run by PCC supported by Aid Management Division. In 2008 this changed to run by the new Infrastructure Committee (IC) and Rarotonga projects were included
- Ministry of Works and Ministry of Outer Island Affairs merged in late 2008. IC secretariat became the Prime Minister's Office
- The DPA ended in 2010 but some projects were still continuing until 2013.

The infrastructure projects covered by the DPA were:

- Rarotonga Avatiu Harbour Extension
- Manihiki/Rakahanga Power Feasibility study
- Mauke Water Supply
- Mitiaro Ground Water Investigations
- PUK/MHX/RAK/PYE Airport Feasibility Study
- Southern Group Power/Water Reticulation GIS

- All Islands technical assistance for the Project Coordinating Committee
- Mitiaro Harbour construction
- Manihiki Harbour construction
- Nassau Harbour construction
- Aitutaki Power Design Document.

Tonga (Popua) Dumpsite Rehabilitation (2004-2008) (Solid waste):

In 2004 the town dump for Nuku'alofa was located at the Popua site (also known as Tukutonga) on Waterfront Road, approximately 1.5 kilometres from the centre of downtown Nuku'alofa. The site was reported to have been used for waste since the 1950's. Residential properties abutted the dump site, and an informal (squatter) settlement was adjacent whose occupants accessed the site and scavenged materials for income. The site is bounded by the lagoon on two sides and there is regular tidal influx of water on the perimeter, and occasional surges from peak tides. The site was open to all-comers, and there were no charges for dumping. There was no perimeter fence, and pigs, dogs and cats free-ranged across the site, along with both adult and child scavengers. Windblown litter was scattered widely.

A new landfill was being completed at another location on Tongatapu (Tapuhia) as part of a comprehensive, island-wide solid waste management programme. Once the landfill at Tapuhia opened, it was desirable that no further dumping be allowed at the Popua dump site, and that the site be enclosed and rehabilitated.

NZAID funded the rehabilitation for the Popua site through engagement of Coffey International Development Pty Ltd (Coffey) to manage the process. Coffey was also the lead contractor on development of the new Tapuhia waste site. A range of outcomes were considered for the rehabilitation process and it was agreed, through discussion between NZAID and the Tongan Government, that the area be engineered to a state such that it can be used as open space passive recreational reserve. The final form of the site was shaped as low pyramid to achieve minimum irregular compaction and slope failure, and included a "capped liner" to meet NZ and Australian standards.

Approximately NZ$2million was spent on the closure. The project planning began in 2004 and rehabilitation work started on site in 2007. The work was completed at the end of 2008.

The main stages in the closure and rehabilitation works were:

- Stage 1 Closure – including discussions with the Tukutonga community living adjacent, schedule of works, erection of a boundary fence on two sides of the site, and sign posting advising closure
- Stage 2 Preliminary Investigations – including geological and hydrological investigations to confirm the engineering concept design
- Stage 3 Final Design – including design, cost estimates, environmental impact assessment and asset management plan
- Stage 4 Construction – rehabilitation works using plant and labour hire under direction by Coffey
- Stage 5 Final Form and Handover.

Niue Power Station Rebuild (2006-2008) (Energy):

The Niue Power Station Rebuild (also known as Niue Poe) covered rebuilding of the sole power station serving Niue after a major fire in May 2006. The power house was extensively damaged, destroying two of the three generators and damaging the third. Power supply was immediately lost to all of Niue. The Niue Power Station Rebuild project covers the time from the initial fire in May 2006 to handover of the new Niue Power House in July 2008.

A summary of the timeframe is provided below:

1. 30th May 2006 – Fire in Poe powerhouse destroyed two of the three generators and damaged the third.
2. June 2006 – Following one week of no power for the whole island, New Zealand Defence Service (NZDS) along with Gough, Gough and Hamer (GGH) installed one new temporary generator and repaired the damaged one. The temporary fix was supposed to be for the short to medium term, (i.e. up to 6 months whilst new generators were procured) during which time there were still issues such as brown outs and power cuts. GGH made a number of recommendations which included:
    - Short Term - New switch gear installed
    - Short Term - Temporary new powerhouse building constructed.
    - Short Term - Replace alternator in generator 1
    - Medium Term - Installation of two generators with accompanying switchgear and cabling
    - Medium Term – New transformer installed
    - Medium Term – Complete gutting of the powerhouse and upgrading to NZ specifications.
3. June 2006 – Owing to rising costs, two GGH technicians were sent home. The third technician remained on Niue to install the new switch gear.
4. August 2006 – It was decided that a needs analysis be undertaken to work towards the long term stabilisation of the Niue power infrastructure.
5. September 2006 – Empower consultants visited Niue to assess current infrastructure and make recommendations for a sustainable long-term power system.
6. November 2006 – Approval was given by NZAID for $2m spend in 2007 for new infrastructure including new generators, cabling and controls.
7. December 2006 – NZ High Commission received an 'invoice' for short term powerhouse works which was not within the original budget. It agreed to pay up to $60k of the $72k budget (actual payment is not known).
8. 31st July 2008 – Completed powerhouse handed over to the Niue Power Corporation.
9. Two separate solar projects (JICA / EU) have subsequently installed solar plants on Niue which have not been able to be integrated in to the grid.

Summary of Activity Performance

- SIRIP was very successful overall, largely meeting its objectives and having good local communication and donor coordination; the project is likely to be sustainable because ongoing maintenance contracts have been let, local communities are involved; local capacity is being built in MID, and the contracting and consulting industries; and there is an ongoing project to continue the work of SIRIP.
- Cook Islands DPA was more of a mixed bag with successful setting of priorities (that may have eroded post project) and some appropriate original local consultations, although

problems were nevertheless encountered because of a lack of local community support and approval for subprojects; no cost data are presented and no current information seems to exist on subproject sustainability.

- The Tonga Dumpsite Rehabilitation project was successful in technical or engineering terms (adherence to cost projections is unclear), but its major failure was the seeming deliberate exclusion from the project scope of the closure's impact on the scavenging-based livelihood of local residents; responsibility for maintenance is still unassigned and therefore sustainability is uncertain.
- The Niue Power Station Rebuild was also technically successful (with little information on how expenditures compared with cost projections), although its maintenance/sustainability is fairly fragile and based on long distance electronic monitoring by the engineering contractor.

Appendix Two – References and Source Documents

General

Allen and Clarke, *Lessons for Policy And Practice from New Zealand Aid Programme Activity Evaluation Reports 2011-2014*, August 2014

MFAT, *International Development Policy Statement,* March 2011

MFAT, *Value for Money Guideline*, 2011.

MFAT, *New Zealand Aid Programme Strategic Plan 2012-15,* 2012

MFAT, *New Zealand Aid Programme Sector Priorities 2012-15*, 2012

MFAT, *Strengthening the Integration of Cross-cutting Issues into the New Zealand Aid Programme – 3 Year Strategy*, April 2012

MFAT, *Environmental and Social Impacts Guideline*, August 2012

MFAT, *Climate Change Operational Policy*, August 2012

MFAT, *Environmental and Social Impacts Operational Policy,* August 2012

MFAT, *Gender Analysis Guideline,* September 2012

MFAT, *Gender Equality Knowledge Note,* September 2012

MFAT, *Determining the Cross-cutting Thematic Issues Markers Guideline,* March 2013

MFAT, *Human Rights Analysis Guideline,* April 2013

MWH, *Evaluation Plan for Evaluation of Infrastructure Investment in the Pacific*, November 2014

Organisation for Economic Co-operation and Development, Development Assistance Committee (OECD DAC), *Principles for the Evaluation of Development* Assistance. 1991.

Overseas Development Institute, *Infrastructure Development in the Pacific Islands Document Review*, April 2014a

Overseas Development Institute, *Framing an Impact Evaluation of Infrastructure in the Pacific*, June 2014b

Pacific Infrastructure Advisory Centre, *Infrastructure Maintenance in the Pacific – Summary Paper*, 2013

Pacific Infrastructure Advisory Centre, I*nfrastructure Maintenance in the Pacific*, 2013

World Bank, *An OED Review of the World Bank's Assistance to Water Supply and Sanitation*, 2003World Bank, *Public and Private Financing of Transport: An OED Review of World Bank Assistance Approach Paper*, January 2005

World Bank, *A Decade of Action in Transport*, 2007

World Bank, *An Evaluation of World Bank Support, 1997–2007 Water and Development*, 2010

World Bank, *Approach Paper - Sustainable Provision of Infrastructure Services and the World Bank Group Phase I—Transport Sector*, October 2011

World Bank, *Improving Institutional Capability and Financial Viability to Sustain Transport*, March 2013

Solomon Islands Road Improvement Project (SIRIP) (2007-2013) (Transport):

Asian Development Bank, *Completion Report - Solomon Islands: Post-Conflict Emergency Rehabilitation Project*, September 2009

Asian Development Bank, *Completion Report - Solomon Islands: Road Improvement (Sector) Project*, April 2014

MFAT, *Activity Completion Assessment for Solomon Islands Road Improvement Project,* October 2014

Solomon Islands Government, Ministry of Infrastructure and Development, *National Transport Plan 2011-2030, 2011 – 2013 Transport Sector Action Plan*, September 2010

Cook Islands Outer Islands Development Infrastructure Construction and Upgrade, Development Partnership Arrangement (2005-2008):

Asian Development Bank, *Cook Islands: Final Report for Preparing the Infrastructure Development Project,* April 2009

Cook Islands Government/New Zealand Agency for International Development/Australian Agency for International Development, *Cook Islands Joint Country Strategy 2008-2017*, July 2008

MFAT, *NZAID Infrastructure Development Projects, As at 25 August 2006*, August 2006

MFAT, *Terms of Reference, Review of the Development Partnership Arrangement (DPA*), 2009

MFAT, *Contract - Team Leader - Review of the Cook Islands Outer Islands Development Partnership Arrangement,* 2009

MFAT, *Activity Completion Assessment: Upgrading of Mauke Water Supply System*, October 2013

NZAID, *Cook Islands: Outer Islands Infrastructure Programme And Cyclone Recovery Reconstruction Plan Report,* 2008

New Zealand Government/Australian Government/Cook Islands Government, *Development Partnership Arrangement for Cook Islands Outer Islands Development Infrastructure Construction and Upgrade 2005-2008*, October 2005

Okotai, Petero, Voyager Group, *A Review of Capital Expenditure Management for Outer Island Development in the Cook Islands*, 2007

Peek, E and Miria-Tairea, M, *Review of Development Partnership Arrangement*, 2009

Robertson, Pip. *A Sustainable Solution* (Article on Mauke Water Supply Upgrade), July 2010

Tonga (Popua) Dumpsite Rehabilitation (2004-2008) (Solid waste):

Coffey International Development, *Popua Landfill Rehabilitation Design Report*, December 2007

Coffey International Development, *Popua Rehabilitated Site Asset Management Plan*, March 2009

Coffey International Development, *Popua Dumpsite Project Completion Report*, March 2009

GHD, *Report on Tukutonga Refuse Site Rehabilitation DRAFT Process Review and TOR for Contractor*, April 2006

Guttenbeil Consultancy, *Tukutonga / Popua Dump Site Closure - Community Consultation Report Assessing the Social & Economic Impacts of the Tukutonga Dump Site Closure*, November 2005

Hill Young Cooper Ltd, *Tukutonga / Popua Dump Site: Closure and Rehabilitation Scoping Report*, April 2004

MFAT, *Contract for Services - Tongatapu (Popua) Dump Site Rehabilitation*, April 2007

MFAT, *NZAID AMS - Programme Activity Authority - Crown Expenditure,* October 2013

MFAT, *Popua Dumpsite Rehabilitation Project, Justification for Extension of Contract Completion Date and, Additional Personnel Inputs for Works Supervisor/Project Manager*, date unknown

MWH New Zealand Ltd, *Tongatapu Refuse Site Rehabilitation Design Review*, December 2007

MWH New Zealand Ltd, *Tongatapu Refuse Site Rehabilitation Construction Review*, September 2008

MWH New Zealand Ltd, *Tongatapu Refuse Site Rehabilitation Completion Review*, January 2009

NZAID, *Tukutonga/Popua Dump Site Closure Community Consultation Terms Of Reference*, 2005

NZAID, *Contract with GHD Ltd*, March 2006

NZAID, *CONTRACT FOR SERVICES Tongatapu (Popua) Dump-Site Rehabilitation (NZAID-Coffey)*, April 2007

NZAID, *Tukutonga/Popua Dump Site Social Impact Assessment Terms Of Reference*, date unknown

NZODA, *Tonga: Rehabilitation of Popua Rubbish Dump Site : Feasibility/Design Study Draft Terms of Reference*, date unknown

Tongan Environment Planning and Management Strengthening Project, *Working Paper 35: Environmental Impact Study: Tapuhia Waste Management Facility and Rehabilitation Dump Site,* 2000.

Niue Power Station Rebuild (2006-2008) (Energy):

NZAID, *AMS - Programme Activity Authority*, 2006

MFAT, *Notes - Niue Powerhouse fire Part 2:Based on discussions with S.Williams of GGH of 10 June 2006. Current Situation*, June 2006

MFAT, *Draft For Discussion, Niue Electricity Generation Terms of Reference*, date unknown

Ojala, Anton. *Fax (Post to Wellington) Niue: Powerhouse Rebuilding*, December 2006

Smythe, Brian, *Notes for Remarks by His Excellency Brian Smythe on the occasion of the handover of the rebuilt Niue Power House*, July 2008

Appendix Three – List of Persons Consulted

Solomon Islands Road Improvement Project (SIRIP) (2007-2013) (Transport):

- Rishi Ram Adhar, Senior Project Officer, ADB, Sydney
- Helen Bradford, Development Manager - Solomon Islands, MFAT
- John Claasen, Kiribati Development Manager, MFAT, Wellington
- Matthew Howell, Deputy Director (Multilateral & Pacific Regional), MFAT, Wellington
- Luke Kiddle, First Secretary Development, MFAT, New Zealand High Commission,, Honiara, Solomon Islands
- Jimmy Nuake, Undersecretary of the Ministry of Infrastructure Development, Solomon Islands
- Lemuel Siosi, Resident Engineer, Ministry of Infrastructure Development, Solomon Islands

Development Partnership Arrangement for Cook Islands Outer Islands Development Infrastructure Construction and Upgrade, (2005-2008 :

- Steven Barrett (formerly Aid Management Division, Cook Islands Government), Senior Development Programme Coordinator, MFAT, New Zealand High Commission, Rarotonga, Cook Islands
- Roger Cornforth, Deputy Director Tokelau/Niue/Cook Islands, MFAT, Wellington
- Martin Garrood, Development Manager Energy, MFAT, Wellington
- Howard Markland, Development Manager Cook Islands, MFAT, Wellington
- Joseph Mayhew, First Secretary Development, MFAT, New Zealand High Commission, Rarotonga, Cook Islands

Tonga (Popua) Dumpsite Rehabilitation (2004-2008) (Solid waste):

- Kirsty Burnett (formerly Development Programme Manager, MFAT), International Development Consultant, Solomon Leonard Ltd
- Martin Garrood, Development Manager Energy, MFAT, Wellington
- Kirsten Hawke, Counsellor, Health and Education, DFAT, Canberra
- Elena Noyes, Development Manager Tonga, MFAT, Wellington
- Dominic Walton-France (formerly First Secretary Development, MFAT, New Zealand High Commission, Nuku'alofa, Tonga), Alternate Executive Director, ADB, Sydney

Niue Power Station Rebuild (2006-2008) (Energy):

- Cameron Cowan, Deputy Head of Mission and Aid Manager, MFAT, New Zealand High Commission, Niue
- Roger Cornforth, Deputy Director Tokelau/Niue/Cook Islands, MFAT, Wellington
- Suzette Holm, Development Manager Niue, MFAT, Wellington
- Anton Ojala, Manager, Pacific Bilateral Unit, MFAT, Wellington
- Gareth McCabe, Gough Group (contractors)
- Ross Ardern (former Niue Police Commissioner) High Commissioner, New Zealand High Commission, Niue

General: (all MFAT Wellington)

- Stuart Calman, Deputy Director - Energy, Infrastructure & Environment
- Sally Jackman, Development Manager - UN/Human Rights
- Elisabeth Poppelwell Development Manager - Evaluation and Research
- Mike Sansom, Development Manager - Cross Cutting and Gender
- Mike Schruer, Principal Development Manager - Infrastructure/Energy
- Andrea Stewart, Development Manager - Environment/Climate Change/Cross-cutting Issues
- Ingrid van Aalst Principal Evaluation and Research Manager.